Master Tracks Pro

for the Apple //gs

From Passport Designs

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Master Tracks Pro was designed by Dave Kusek and Don Williams. Software written by Don Williams
Apple IIgs version modified by David Howell

Original Master Tracks Pro Manual written by Bob Cowart,Steve Cummings
Dave Kusek, Jay Lee and Lowell Levinger
Apple //gs version modified and edited
by Denis Labrecque and Banana
Published by:
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625 Miramontes St.
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(415) 726-0280

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5. Song Editor window

8. Using the File Menu

9. Using the Edit Menu

10. Using the Change Menu

14. Advanced Topics

by Dave Kusek and Lowell Levinger

Introducing Master Tracks Pro

Welcome to Master Tracks Pro for the Apple //gs. Master Tracks Pro, from Passport Designs, Inc. is a powerful and versatile 64 track MIDI sequencer for the Apple //gs. Master Tracks Pro was designed from the ground up at Passport to offer you the most advanced, state-of-the-art multi-track MIDI sequencer available today.

Complementing a full line of software products for musicians, Master Tracks Pro represents Passport's commitment to offering serious musicians the composition and performance features they want most.

Master Tracks Pro gives you a free-form approach to composing music. Using as many as 64 separate MIDI tracks, you can create, combine or edit musical phrases of any length, just as you would use a word processor to write a document. You can enter these musical phrases into the 64 track MIDI recorder either by simply playing your MIDI equipped instrument in real or step time, or by entering individual notes from the computer using the mouse. Then you can easily edit, rearrange and combine the tracks in a variety of ways to build complete songs. The program provides real-time and step-time input, song editing, note editing, and more in one package.

features

Master Tracks Pro includes features which let you do the following:

• Control the sequencer using an on-screen control panel that looks like a tape recorder transport control. Just click on Play, Record, Pause, Stop, Rewind or Fast–Forward to move instantaneously from measure to measure.

• Set the meter, tempo and beat independently for each measure.

• Record all MIDI events on the 16 possible MIDI channels simultaneously, including key velocity, after-touch, sustain, modulation and pitch wheel changes and program changes.

• Apply automatic and musically accurate error correction to your music, compensating for imperfect playing technique.

• Merge, delete, transpose, repeat and copy individual tracks, or selected portions of tracks.

• Change the note velocities, continuous MIDI data, note durations, key, tempo, or meter for whole tracks or just selected regions of a track or tracks.

• Change playback tempo instantly or gradually over time.

• Visually edit your compositions in a window that displays all MIDI events. Change a note's pitch by dragging it to a new position. Step input using the mouse or MIDI keyboard with selectable duration, velocity, articulation and MIDI channel for each note.

• Graphically plot and alter pitch bend, aftertouch, key pressure, modulation, controllers, tempos and program changes.

• Set markers anywhere in a piece and easily jump to those locations for easy editing. An *auto-rewind* feature can be set to quickly "rewind" your composition to a given point for effortless recording of multiple takes of a single track, or of subsequent tracks.

• You can incorporate your MIDI music into professional audio and video productions utilizing MIDI Song Position Pointer and external SMPTE synchronizers.

how it works | Master Tracks Pro is similar to a fancy tape recorder, only much more capable. Like a multi-track tape machine, Master Tracks Pro lets you record one track of music at a time, playing them back later as an ensemble. You can even edit each track individually to make changes or fix mistakes — a feat which is impossible with audio tape recorders. And with a total of 64 tracks available at any given time, Master Tracks Pro offers much greater flexibility than do most tape machines.

As you may know, there are many MIDI sequencers available today. So, what makes Master Tracks Pro different? To begin with, Master Tracks uses dynamically allocated tracks. This means that the various tracks in a given musical piece can be of any length, and that length is alterable. Many other sequencers require all tracks to be the same length. Master Track Pro does not.

Secondly, Master Track Pro allows you to alter discrete portions of a track or tracks after you've made a recording. This is similar to the ability to mark and alter block of text when using a word processor. Regional selections are made in the same way with Master Tracks Pro as in other Apple //gs and Macintosh programs such as Macwrite or Macpaint. After marking a block of music in Master Tracks Pro, you can then modify the selected notes or MIDI events in a wide variety of ways.

You record your musical sequences, one track at a time, either in real time (as you play on a MIDI-equipped keyboard), or note by note using the mouse or midi keyboard (step entry). For step entry of notes, Master Tracks Pro provides a graphic step editor that lets you see each note on the computer's screen as you enter it. The step editor also lets you precisely edit each note or other musical event after it has been recorded, whether you've used real time or step entry to record your music.

In addition to editing individual notes, tracks as a whole can be further edited, and they can be mixed together with other tracks in a variety of ways to form compositions of various lengths — even very long pieces. Using the Master Tracks Pro's *clipboard*, you can cut and paste sections of one piece into another piece to quickly create songs based on a number of existing sequences.

the interface

Master Tracks Pro follows well established traditions for the Apple //gs when it comes to using the keyboard and mouse to control the program. If you have used your //gs even a little and know your way around a few other //gs programs, you'll be able to learn Master Tracks Pro very quickly.

Master Tracks Pro's many program functions and commands are organized logically into a number of different windows where you work with your sequences. There are six main windows:

▶ Transport window — where you control your MIDI *tape deck* by clicking on Play, Stop, Fast–Forward, etc.

▶ Track Sheet window — where you record and playback your tracks.

▶ Conductor window — where you control tempo, meter and beat settings.

▶ Song Editor window — where you display, cut, copy, paste, and regionally alter tracks. The structure of a sequence is displayed and edited in units of measures.

▶ Step Editor window — where you display the individual notes in a track. Graphic display of note data lets you see exactly what you are doing. The notes are displayed on a piano roll, from left to right.

▶ MIDI Data windows — where you display and edit a graphic plot of pitch bend, channel pressure, key pressure, modulation, controllers, or program changes. There are seven MIDI Data windows:

> Pitch Bend
> Channel Pressure
> Key Pressure
> Modulation
> Controllers
> Program Change
> Conductor Edit Window

switching between windows

All of the main windows described above include menu selections at the top of screen, and various *icons* located on the screen which are used in the editing or record/playback operations. These are explained in detail in their respective chapters of this manual.

All of the windows and their associated commands are accessed via the menu bar at the top of the //gs's screen. You simply point to the name of the window or command you want, press the mouse button and pull the mouse toward you. Then highlight the selection you want from the menu, release the button, and the program does the rest.

Master Tracks Pro lets you have several windows "open" and on the screen at the same time. However, at any given time, there is only one *active* window. The active window is the one you are working on at the time. To activate a different window you simply point to it and click the mouse. Additionally, you can move windows around to convenient locations on the screen and size them according to your preferences.

Once you have the windows set up the way you like, you can then easily switch between them. It's a little like setting up your desktop or work area to have everything in a convenient location. A setup we've found useful lines up the Song Editor and Sequencer windows so that tracks line up. The transport control sits at the bottom of the screen, as you see in Figure 1.1, as does the conductor window.

figure 1.1
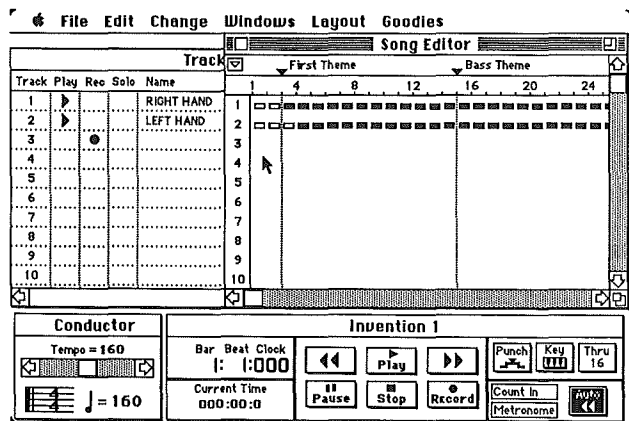
using
command
keys

The window's menu items all have keyboard equivalents, too. The three main Master Tracks Pro windows can be accessed by pressing Command–1, 2, or 3.

Aside from the menu and window selection techniques described above, there are some shortcuts you may want to use. The Command key performs certain operations, such as Copy, Paste, and Cut in addition to using the menu selections directly.

To use these commands, you press the Command key and the corresponding key at the same time. Sometimes this is the first letter of the command. Having two ways to select and execute commands allows flexibility for individual preferences and situations. You may find that you prefer using the menus while you are learning the program, but that you can get things done faster using the command keys once you're more familiar with the program. If you have questions about this or other Apple //gs specifics, consult the user's guide supplied with your computer. (see the Summary of MT Pro keyboard commands in Chapter 14)

Now proceed to Chapter 2 to connect up your hardware and install your program.

Before you begin using Master Tracks Pro, you will have to:

▶ Insure that your Apple //gs has a minimum of 1 meg total memory (see the following section on hardware requirements).

▶ Hook up your MIDI interface to your Apple //gs (refer to your interface owners' manual) .

▶ Connect your MIDI cables between your synthesizer and computer (see the diagrams at the end of this chapter).

▶ Make a working copy of the Master Tracks Pro disk or install the software onto your hard disk (if you are using one) see below for details.

▶ Format at least one blank disk to record your songs before running Master Tracks Pro. You *can not* format a disk from within the program!

This chapter explains how to do these procedures. Please take the time to read this chapter so that you can begin using Master Tracks Pro quickly and without any unnecessary headaches.

copy protection

Passport Customer Protection Policy

Master Tracks Pro is copy protected. That means it's nearly impossible for you to make multiple copies of the disk and the Master Tracks program. Believe it or not, there are some people out there who paid thousands of dollars to monolithic companies for their synthesizers and computers, but think nothing of stealing a relatively inexpensive software program from a company like us. There's no foolproof cure for this kind of stupidity that we can think of, except to try preventing it by copy protecting our disks. Unfortunately, this makes things more complicated for both you and for us. It's an extra job for us to make our disks difficult to duplicate, and you have the hassle of being limited in the number of backup copies you can make for yourself in case your disk is somehow ruined.To share these programs with friends or to use them on multiple computers or to violate the software licensing agreement in any way is a criminal act. It's not just slightly criminal, it's as if you broke into our offices and stole cash from our safe. The end result is the same. We end up getting ripped-off for something that a lot of people put a tremendous amount of time and effort into.

We trust that you, as a professional, will not help others steal our handiwork. It is in your own best interest to ensure that the Master Tracks Pro venture remains profitable. We are committed to constantly improving Master Tracks Pro and to providing you with a high level of customer support. By not giving Master Tracks Pro away to others you will be helping us to serve you better.

In order to protect your investment in Master Tracks Pro we have instituted a few procedures that we hope will discourage illegal copying and use of this software. Please be assured that Passport intends to protect its rights in Master Tracks Pro to the fullest extent permitted by law.

customer service

The Master Tracks Pro system consists of several highly complex and constantly evolving programs. It is very likely that, at some point in time, you will need a program update or some other form of assistance. For this reason it is *vitally* important that you return your warranty registration card and become a registered owner. Only registered owners will be eligible for customer service. Sending in your warranty card also places you on our database to receive new product and update announcements.

*registering
as a user*

*getting a free
backup disk*

Send in your warranty registration card today !

First of all, If you return your warranty card enclosed in the package, you will receive a FREE BACKUP DISK from Passport. This backup disk can be used as your working program disk if you so choose. If you NEVER store any data files on your program disk it should last you quite a long time. Replacement backups can be purchased from Passport - contact customer service for more details.

Keep your original disks in a safe place !

Always keep the original disks in a safe place since they must be returned in order to receive any future updates. Also, you should have both your original disks and your manuals handy when calling in for customer service. Our personnel may ask you a few simple questions to verify that you are an authorized user.

By following these simple procedures you will ensure that Master Tracks Pro remains reasonably priced and that the entire Master Tracks Pro system will continue to evolve.

You can play a part in the evolution of Master Tracks Pro. We are extremely interested in your feedback on the program and your suggestions for future enhancements. The current version of Master Tracks Pro is the result of suggestions and comments from hundreds of users just like you. Let us know what you want to see next and we will try and implement your ideas.

Remember, you have not just purchased a disk and several hundred printed pages, you have invested in the expertise of all the people involved in the entire Master Tracks Pro project. Thank you for your support!

▶Hardware requirements | **Master Tracks Pro requires an Apple IIgs with** *at* *least* **1 meg of total memory!** The most common configuration will be a standard 256k Apple //gs with an extra 1meg memory card installed, giving you a total of 1.25 meg - contact your local Apple dealer for more information. MT Pro also requires that you have the IIgs system ROM ver.B installed in your IIgs motherboard. Consult your Apple dealer for details.

memory usage | When working with your files, we recommend that you do *not* go below 60k free memory - this has been found to cause problems with the Apple //gs. Use the "Memory" window from the Goodies menu to check memory usage. If you consistently find that you run out of memory when working on large files you may wish to upgrade to more memory in you Apple //gs.

Interface Installation | Master Tracks Pro works with all 1mHz passive MIDI interfaces such as the model MH-01m MIDI interface from Passport. Simply install your interface following the instructions supplied with it to either the modem port or the printer port (please be sure to also set the proper port in the Master Tracks Pro software - see chapter 13 "MIDI Setup" for more details).

hooking up your MIDI cables | The next step is to hook up your MIDI cables. The exact configuration of cables will vary depending on your particular arsenal of equipment. However, two general schemes are shown in Figure 2.1. You will need at least two cables — one for MIDI–In and one for MIDI–Out. The first cable goes from MIDI–Out on your synthesizer or keyboard controller to the MIDI–In connector on the MIDI interface connected to your Apple //gs. The second one goes from MIDI–Out on the interface to MIDI–In on your synthesizer.

You may want to hook up other MIDI cables too, if you have additional synthesizers and sound modules. Some interfaces have additional sockets for such connections. alternately, you may chain together a number of synthesizers via any MIDI–Thru connectors which your synthesizers have. To do this, you simply run a cable from your main synthesizer's MIDI–Thru socket to the second synthesizer's MIDI–In socket, and so on. Refer to the illustrations on page 2–6 if you are in doubt about cable hookups.

►Software Installation

Master Tracks Pro can simply be run from the original program disk provided. However, we recommend that you make a "working copy" to ensure that you have a backup in case anything goes wrong with the copy.

data disks

You should have at least one formatted blank disk to store the songs you will be creating - it is a good practice not to save song files onto your program disk. *The Apple //gs does not allow Master Tracks Pro to format a disk while running.* (Refer to your //gs manual if you are unsure how to format a blank disk)

making a "working copy"

To make a working copy of the program on a floppy disk, copy the program disk onto a formatted blank disk using the finder or a copy utility. You can then boot with the copy but you must insert the original master disk when prompted to.

Use this backup as your working disk and keep the original program disk in a safe place to use as a spare in case anything happens to your working copy.

hard disk installation

To install the program onto a SCSI ("scuzzy") hard disk (such as the DataFrame), simply boot your system off the hard disk, insert the original program disk into the Apple //gs and double-click on the Master Tracks Pro icon. The protection program built into Master Tracks Pro will automatically sense the presence of the hard disk and ask you if you wish to install the program on a hard disk volume.

If you do not wish to install Master Tracks Pro™ on your hard disk, select EXECUTE ORIGINAL and the program will boot off of the 3.5 inch disk.

If you select install, you will be presented with a dialog box showing the contents of your program disk. Click on DISK to display the contents of your Hard Disk and then click on INSTALL. You can install it using a different filename if you wish.
If the program does not give you the prompt, then it may not work on your hard disk.If you have trouble installing the program on your hard disk make sure that the program is not locked on the original program disk or that the program disk is not write protected.

removing a
hard disk install

You can only install the program twice on a given hard disk. However, you can "deinstall," or remove, a copy of the program from the hard disk back onto the original floppy in order to move it to another hard disk.

To remove your installed copy from your hard disk back onto the original floppy, hold down the OPTION key while you double click the Master Tracks Pro™ icon on the original program disk. A dialog box will offer you the chance to select REMOVE. Do just that. Click on DISK and then open the folder containing your installed copy. Select the copy and click REMOVE.

You can then Execute Original, re Install the copy, or return to the Finder. If you are using a Macintosh SE with built in hard drive, you must boot from the program disk for the installation procedure.

modifying your
system folder

If you are using a system other than the one provided with your Master Tracks Pro disk, you must insure that you have the correct MIDI device drivers installed. You must have a DRIVERS folder included in the SYSTEM folder of your startup disk (either floppy or hard disk). There are two files which must be present in your DRIVERS folder before MT Pro will run properly.

These files are named APPLE.MIDI and CARD6850.MIDI. You will find these files included in the Drivers folder of your System folder which is included on your Master Tracks Pro disk. Copy these files into your ICONS folder.

starting up
Master
Tracks
Pro

To start up Master Tracks Pro, follow these instructions:

1. Turn on your MIDI equipment, then your computer in the normal manner.

2. If you are running the program from a floppy disk, make sure you insert your Master Tracks Pro working disk.

3. Double-click on the Master Tracks Pro icon (or on the name **Master Tracks Pro** if you are viewing your directory by name rather than by icon).

4. Insert the original master disk ("key disk") when prompted to. This will load the program and display the Track Sheet window, Transport control, Conductor and Menu bar.

5. Eject the master disk and insert a formatted blank data disk.   You're ready to go!

Now move ahead to Chapter 3 to quickly learn how to record and play a tune with Master Tracks Pro.

cable hookup
for self
contained
synthesizers

MIDI Interface·plugs into either Serial Port

To Audio Amplifier

MIDI OUT   MIDI IN
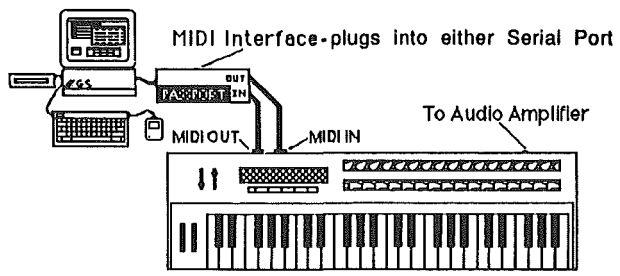
cable hookups
for systems
with controller
keyboards
and outboard
sound modules

MIDI Interface (Plugs into serial Port)

MIDI
IN

MIDI
THRU

MIDI
OUT

MIDI IN
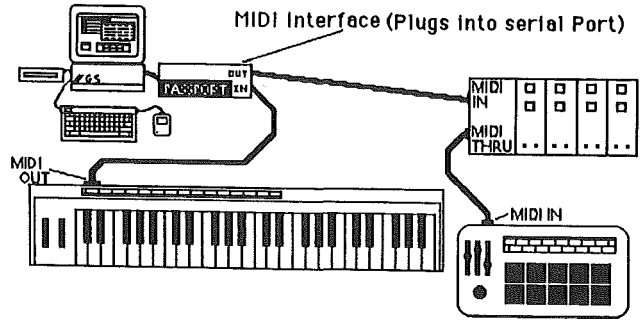
This Chapter walks you through the basics of recording, editing and playing back a tune using Master Tracks Pro. Only the basics are described here, but it's enough to get you going. We certainly recommend your reading the rest of this manual to take advantage of the full capabilities of the program.

running the program

1. Begin by making sure your MIDI interface and cables are installed properly (see the section on Installation), and then turn on your MIDI instrument (it's best to turn on your instruments before you turn on the Apple //gs). You should also have a blank, formatted disk to save your sequences on (see chapter 2).

2. Turn on your Apple //gs, put your Master Tracks Pro disk in a disk drive, and wait until the system boots and the Finder window appears on the screen.

3. Double click on the Master Tracks Pro icon in the window to start the program. The Master Tracks Pro main screen will appear, with the Transport, Track Sheet, Song and Conductor windows on the screen as you see in Figure 3.1. See chapter 2 for additional startup information.

4. Look at the Transport window at the bottom of the screen. This window contains the controls you use for starting, stopping, fast forwarding and rewinding. It also has a pair of counters to show you where you are in the sequence, and a number of other controls on the right side of the window.

figure
3.1

File   Edit   Change   Windows   Layout   Goodies

Song Editor

Track Sheet

Track	Play	Rec	Solo	Name	Chnl	Pgm	Loop
1		●			0	0	
2					0	0	
3					0	0	
4					0	0	
5					0	0	
6					0	0	
7					0	0	
8					0	0	

Conductor   untitled

Tempo = 120   Bar Beat Clock   ◀◀   ▶ Play   ▶▶   Punch Key Thru
                  1: 1:000   0

♩ = 120   Current Time   ▌▌   ■   ●   Count In
                 000:00:0   Pause   Stop   Record   Metronome   Auto
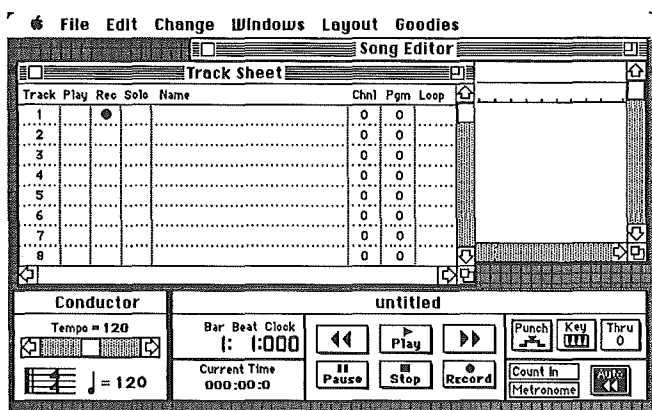
recording
a track

5. Notice that the Auto control is highlighted in inverse video, indicating that it is on. When Auto is on, the sequence automatically rewinds to its start point as soon as you stop playing or recording.

6. Look at the Track Sheet window at the upper portion of your screen. Click on the Record box (the one labeled Rec) in the first track of the sequence. Be sure that a solid black circle appears in the field, indicating that the track is activated and is ready to record.

7. Get your MIDI instrument ready to record your first track, and set it to send and receive on MIDI channel 1. Start the recorder by clicking on Record in the Transport window, or by pressing Enter (or Return) on the Apple //gs keyboard.

8. Play some music. When you're finished playing, click on Stop in the Transport window, or simply hit the spacebar.

Notice that the counter immediately returns to measure 1, beat 1 as soon as you stop the sequence, because Auto (auto-return) is on. Notice also that in the Sequencer window, the Play box for the track you've just recorded now contains a solid black triangle, meaning that it has been activated for playback.

figure 3.2
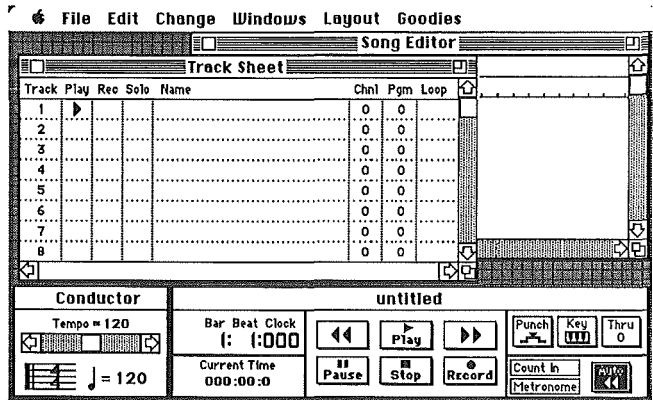
playing your first track

1. To play back your first track, click on the Record box again to deactivate the track for recording, setting it to Play mode.

2. Click on Play in the Transport window, or press the spacebar on the Apple //gs keyboard (see Figure 3.2).

3. To stop playback, click on Stop in the Transport window or press the spacebar again.

recording a second track

1. To record another track, go back to the Track Sheet window and activate the second track for recording by clicking in its Record field. You'll see the solid black circle appear in the field.

2. The rest of the process is identical to the steps you used to record your first track: just click on Record or press the Enter key to start the recorder. You'll hear your first track play while you record. When you're through, click on Stop or press the spacebar to stop the recorder.

playing both
tracks

By now, it's probably obvious what you have to do to play both tracks of your two-track recording. Simply click on track 2's Record box to deactivate it, and start the playback by clicking on Play or hitting the spacebar.

figure 3.3
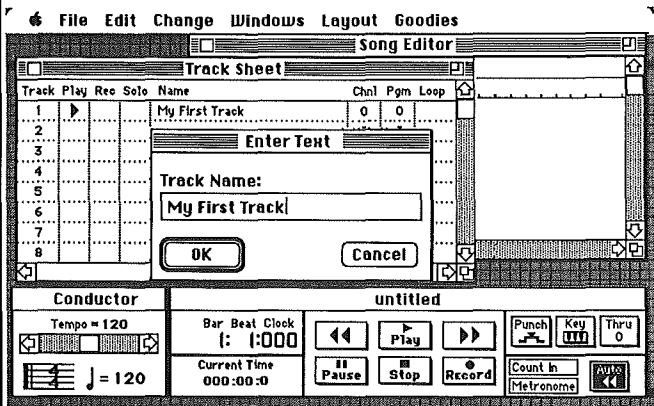
naming your
tracks

Master Tracks Pro lets you give each track a name for easy reference. Typical names might be "Bass", "Horns", "Lead licks", etc.

1. To name your first track, click over the track name field for the track. A small window pops up, as you see in Figure 3.3, and you can now type in the name you've chosen. When you're through, click on OK or press Return.

saving
the sequence
on disk

Master Tracks Pro works like any other Apple //gs program when it comes to saving your work on disk. When you're ready to save:

1. Choose Save as... from the File menu.

2. As soon as you choose the Save as... command, Master Tracks Pro will present a dialog box that lets you name your sequence. You may also select a different Drive or

Eject the current disk. Since there is very little space left on your MT Pro program disk, Eject it and insert a formatted blank disk or data disk. Now click on "Disk" and then type in the name you've chosen, and click on OK or press Return. The file will be saved. (After you've saved a file once, you won't need to enter the name again—it will be saved automatically every time you choose the Save command. Remember, however, that the old file of the same name will be overwritten!)

editing your sequence

Now that you have saved your first sequence, Open the file on your Master Tracks Pro original disk entitled BACH.INVENTION. You can make changes on groups of measures from the Song Editor window.

1. Choose Song Editor from the Windows menu to call up the window. A graphic representation of the sequence will appear in the window, with each track visible as a row of rectangular boxes. Each box represents a measure. If the measure contains any MIDI data, it will appear as a solid black box. If it is entirely empty, the box will appear "hollow," in outline. Both are shown in Figure 3.4.

figure 3.4
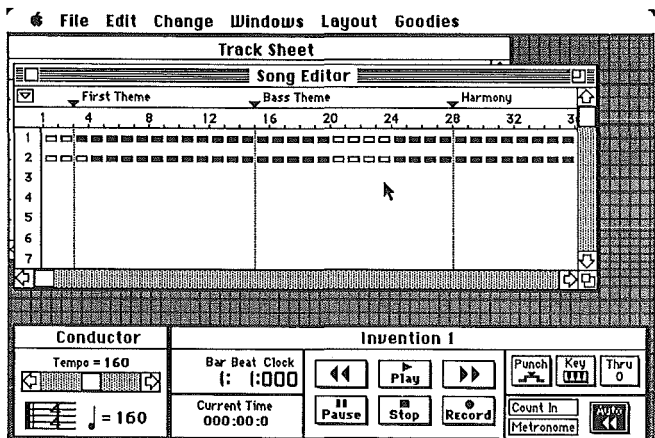
figure
3.5
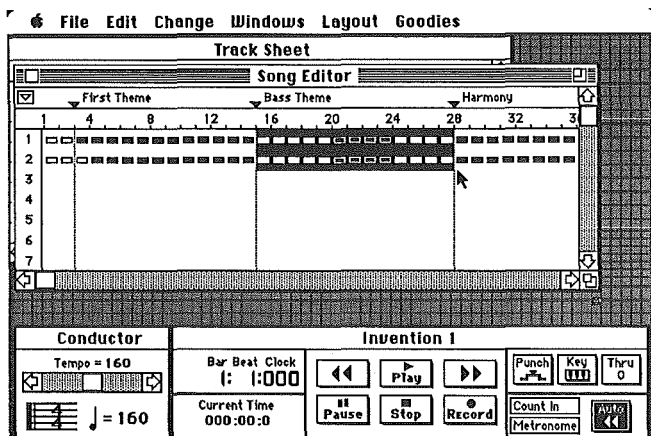
Let's say your sequence has a standard A-B-A pattern, and you want to use the edit commands to repeat the B section.

2. First, copy the B section to the Master Tracks Pro clipboard, a temporary holding area for MIDI data during the editing process. Click on the first measure in the B section in Track 1 and drag the mouse diagonally (with button still down) across both tracks until the entire B section is highlighted, as in Figure 3.5. This *selects* that range of measures.

3. When all the measures in the B section are selected, choose Copy from the Edit menu. During the brief pause, Master Tracks Pro copies the selected measures to the clipboard.

4. Next we need to insert some new measures in the sequence to make room for the repeat of the B section. Click on the space in Track 1 between the last measure of the B section and the first measure of the second A section. You'll see a blinking vertical cursor appear at this *insert point*.

5. Now choose Insert Measures from the Edit menu. When the dialog box pops up, as in Figure 3.6, type in the number of measures that the B section contains. Click on OK or press Return when you've made your entry, and notice that new empty measures will appear in your sequence as hollow boxes.

figure 3.6
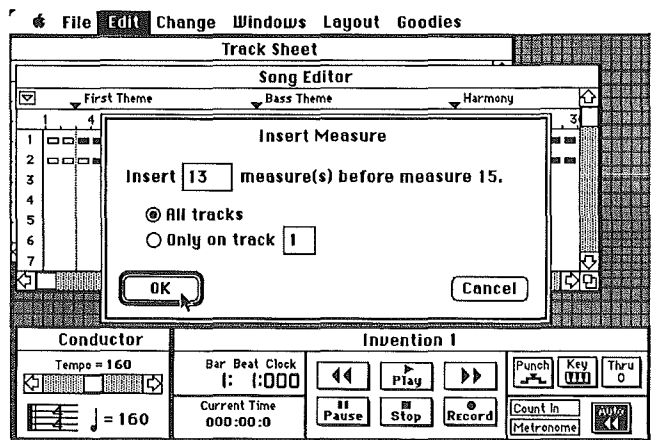
6. Now you're ready to add the B section data into these new measures. Without changing the insert point, choose Paste from the Edit menu. The entire contents of the clipboard will be emptied into the new empty measures in both tracks of your sequence, and you've just created a repeat of the B section.

figure 3.7
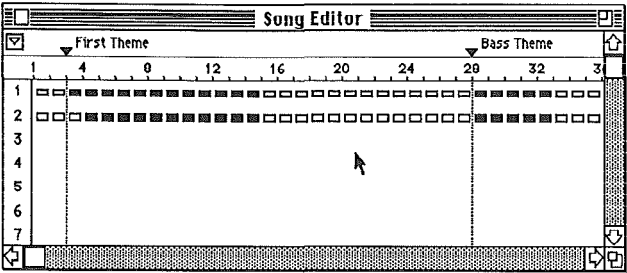
7. You can now click on the Play button or press the space bar to hear your revised sequence.

Please take the time to read the following sections thoroughly - they describe in detail the extensive features of this program (and may save a customer service call!)

Master Tracks Pro is designed to work much like a
conventional multi-track tape deck. Although a sequence is
stored in the Apple //gs' memory instead of on tape, you still
need controls that let you play, record, fast forward, rewind,
and stop the sequence. You also need a counter to tell you
where you are in the sequence. The Transport window is
where Master Tracks Pro provides these features.

the transport
and conductor
windows
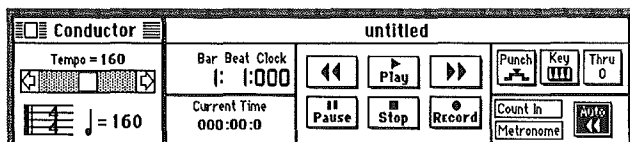
The center portion of the Transport window has six screen
"buttons"— play, record, fast forward, rewind, pause and
stop. They function just as their counterparts on an actual
tape deck. To "press" one of these buttons, you just click on it
with the mouse.

Alternately, you can control any or all of these transport
functions from your MIDI Keyboard. See the section on the
Keyboard command in Chapter 13 for instructions on how to
select the keys you want to use for transport controls. You
can also execute the play, record, and stop functions from
the Apple //gs keyboard.

Here's how each of these transport functions works:

play Plays the sequence beginning at the point currently indicated in the counter. Pressing the spacebar on the Apple //gs keyboard also starts playback. Before starting playback, remember to be sure that the MIDI channels set for each track agree with the instrument(s) that you are using to play the track. Also, the track or tracks you want to hear must be play enabled (see *selecting which tracks play* on page 4-5).

record Click on the Record button to start recording on the track selected on the Track Sheet window, beginning at the location in the sequence indicated in the Measure Counter. Pressing the Enter key (or Return)on the Apple //gs keyboard will also start the recording. A track must be selected before you start recording, or the command will not function. See *selecting which tracks record* on page 4-5 for details.

Each time you record on a track, the new data is recorded over any data previously recorded. You can have Master Tracks Pro start recording at any point in the sequence, and existing data in the track before that point is left intact. Likewise, any data in the remainder of the track past the point at which you stop recording remains untouched.

rewind Click on rewind to rewind the sequence a measure at a time. You can also move instantly to the beginning of the sequence by double clicking on this control. Control A will also rewind the sequence to the top if the Song, Step,Transport or any MIDI Data windows are active.

fast forward Click on the fast forward control to advance through the sequence a measure at a time. Double click to move instantly to the end of the sequence. Control Z will move to the end of your sequence if the Song, Step,Transport or any MIDI Data windows are active.

stop As you'd expect, clicking on the Stop button stops playback and recording. If the Auto function is on, the sequence automatically rewinds to wherever you last started playback. You can also use the spacebar on the Apple //gs keyboard to

all notes off stop the sequence during playback or recording. Pressing the spacebar, or clicking Stop, sends an "all notes off" command to all MIDI channels.

pause Clicking on the Pause button pauses both play and record. When you click again, the sequence resumes playing or recording.

```
Bar Beat Clock
I:  I:000
Current Time
000:00:0
```
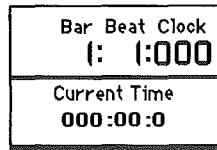
the transport window counters

On the left side of the Transport window are two counters that let you locate your current position in the sequence. The Measure Counter at the top left displays the position in the sequence in measures, beats, and individual clock ticks (Master Tracks Pro's internal clock divides a quarter note into 48 parts (ticks). See the section on the Conductor window for more information about sequence timing).

You can move to any location in the sequence directly by clicking on the measure, beat or clock field in the Measure Counter, and typing in the number from the Apple //gs keyboard.

seeing current time

The Current Time Counter shows the actual time (in minutes, seconds, and tenths of seconds) that has elapsed since the beginning of the sequence . As you'd expect, playing the same sequence at different tempos will result in different current time readings.

```
                    untitled
Bar Beat Clock    ◄◄   ►     ►►    Punch Key Thru
I:  I:000             Play              🎹   0
Current Time      II    ■     ●      Count In
000:00:0          Pause Stop  Record  Metronome  🔊
```
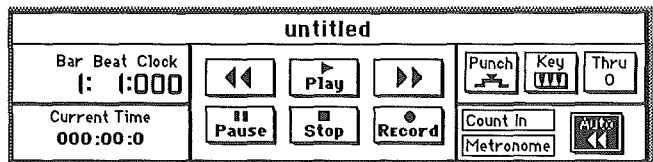
other transport window settings

At the right side of the Transport window are a variety of miscellaneous controls:

wait for MIDI keypress

▶ **Key** Clicking on the Key control highlights the control. Now when you select play or record Master Tracks Pro will wait until it detects that a MIDI key has been pressed and released before it begins recording or playing.

auto

▶ **Auto** Turn on Auto by clicking on it. When Auto is on, whenever you stop the sequence it will automatically "rewind" to the point where playback started last.

count in

▶ **Count In** When this control is on, Master Tracks Pro's metronome counts off one measure according to the meter set in the Conductor window before starting to play or record.

metronome

▶ **Metronome** Clicking on Metronome highlights the control, and turns the metronome on. Now, when you play or record a sequence, you'll hear a click tone on each beat of each measure over the Apple //gs internal speaker for the entire length of the piece. The click tone is also available through the speaker jack at the back of the Apple //gs.

MIDI thru

▶ **MIDI Thru** This control is used when you're recording from a master MIDI controller, that doesn't produce sound itself, or when you want to use one synthesizer to control another while recording. Click on MIDI Thru to highlight it. With MIDI Thru on, the MIDI data you send to the Apple //gs will be passed out the MIDI Out port on your Apple //gs's MIDI interface. All the data will be sent out on the MIDI channel indicated in the MIDI Thru box. If no channel is assigned ("0"), all data will pass thru on it's incoming channel(s). The Thru channel follows the channel set for any track set to Record in the Track Sheet Window.

Punch In/Out

▶ **Punch** Click the Punch button to activate the Punch In/Out record mode. There are two ways to select the Punch region. Double click the Punch button and a dialog box appears, letting you assign the In and Out locations. The second way to select a region is to use the mouse in the Song, Edit or Midi data windows. Any area selected for editing will be the Punch region. After selecting "OK" you may start the transport from any point by clicking Record, pressing Enter or using your MIDI keyboard. Recording will start and end automatically for the selected region.

Punch Settings		
	Bar **Beat Clock**	
In at	1	1	0
Out at	2	1	0
OK		**Cancel**

*the
Track Sheet
window*

Track	Play	Rec	Solo	Name	Chnl	Pgm	Loop
1	▶			Track 1	0	0	
2					0	0	
3					0	0	
4					0	0	
5					0	0	
6					0	0	
7					0	0	
8					0	0	

The Track Sheet window is the display window for some of the most basic information about your sequence. It lists the 64 tracks available in Master Tracks Pro, and allows you to select the tracks that will record or play. You can also select a MIDI channel for all data in each track, choose a name and an initial MIDI program number for the track, solo single tracks, and loop tracks independently.

If the Track Sheet window is not already on your screen, or if it is hidden by other windows, you can activate it by choosing it from the Windows menu, or by pressing Command–1 on the Apple //gs keyboard.

Track Sheet window basics are simple. To change any item in the window, just click in the box of the item you want to change.

For settings that are either on or off, an icon in the box indicates the setting is on, while an empty field means that the setting is off.

For parameters that require you to enter text or numeric values, a Change Value window will pop up, allowing you to enter the information.

A "0" in the channel or program columns indicates that the function is <u>OFF</u> for that track. MIDI data will play out on the channel(s) on which it was received.

You can select any combination of tracks in your sequence to play back. Other tracks that are not selected will not play, even if they contain MIDI data.

selecting Click in the Play box of each of the tracks that you want to
which select for playback. The triangular play icon 6 appears in each
tracks track's Play box to show that the track is selected, and will be
play played when you start the sequence. In addition immediately
after you complete a recording on a track, that track is
automatically set to playback.

To turn play off for that track, click in the box again. The play
icon will become hollow, and the track will not be played when
you start the sequence. Tracks can be muted and turned
back on during playback and recording.

selecting Only one track can be selected for recording at a time. To
which select a track for recording, click in the Record box for that
tracks track. A solid black circle appears in the Record box to
record indicate that the track is selected. When you start recording,
all incoming MIDI data will be recorded on that track (unless
you are using the Record Filter - see chapter 13).

To deactivate a track for recording without selecting another
track, just click on the Record column for that track again. The
record icon disappears.

soloing The Solo command gives you an easy way to play back a
tracks single track or a few tracks without having to individually
deactivate the play box on all the other tracks. Then, when
you want to hear more tracks again, you only have to turn off
Solo on the selected tracks.

To select a track for soloing, just click on the track's Solo box.
You'll see a solid black diamond pop up in the box. To turn
solo off, just click on the box again. Any number of tracks can
be soloed at a time. Option click on any solo box to unsolo all
tracks.

naming tracks Each track can have a name, which serves as a memo you
can use to describe the music in the track or to remind
yourself of which instrument and/or sound you've chosen to
play the track. These track names are saved permanently
with the sequence file when you store it on a disk.

Click on the Name box in the track you wish to name (you can
name any track, even if it does not contain MIDI data). A
dialog box pops up and asks you to type in the name of the
track. You can use any combination of characters you wish.
When you're finished, click on OK or press Return to
complete your entry. Or click on Cancel if you want to return to
the Track Sheet window without making any changes.

*selecting
the MIDI
playback
channel*

The Channel box contains the current MIDI channel setting for playback of the track. To use this feature, you need a little background on the way the program handles MIDI channel information.

Master Tracks Pro supports multiple-channel tracks. You can record on any combination of channels within a track, and you can freely mix data from one track to another, retaining all the original channel data.

If you enter a channel number of 1-16 in the Channel box, all data in the track will be played on that channel. On the other hand, a channel value of 0 plays back the track exactly as it is stored in memory, on the same channel(s) it was received on.

To change the channel, click in the Channel box. A small data entry window will pop up. Type in the number of the channel you want for the track, or use the arrow controls to change the setting. When the channel number is correct, click on OK or press Return to enter it and return to the Sequencer window. Of course, you can click on Cancel to leave the setting as it was. Thru follows the channel for any track set to record.

*setting
the
program
number*

A *program* is the MIDI term for a MIDI device's programmed setup, stored in the memory of the device. On a synthesizer, a program may be equivalent to a "patch",voice or sound. On a drum machine, a program may select a particular pattern, and on a MIDI effects device it may select a configuration setting with pre-programmed values for all the parameters on the device. Each program has a number, and when a MIDI program change message is sent to the device, the device responds by switching to that program number.

Master Tracks Pro allows you to record program changes at any point in a track, and to enter as many program changes as you like via the Program Change window accessible on the Windows menu. On the Track Sheet window, however, the number in the Program field refers only to the program number that Master Tracks Pro will send when the sequence begins playing from the start of the first measure.

If the program setting is 0 (the default), no program change is sent when the sequence begins---your instrument will remain set to whatever program it's already on, until it receives a program change from the sequence data. Likewise, if you start the sequence from some point other than the very

beginning, the program indicated in the Program field is not sent, and only program changes stored in the sequence data will be sent.

To change the program setting, click on the Program field for the track you want. When the small data entry window pops up, type in the number of the program you wish,click on the arrow keys to raise or lower the value or press the appropriate program # on your MIDI keyboard. When the number is correct, click on OK or press Return to enter it and return to the Sequencer window, or click on Cancel to return without entering the change. The program change will be sent out whenever you click OK or press Return even when a sequence is playing.

looping
a track

Each track in a Master Tracks Pro sequence can be independently looped. When the sequence gets to the end of a track, it plays the track over again from the beginning, no matter what other tracks are doing.

Since the Record function always rounds recorded tracks to the nearest complete measure, the track always plays to the end of a measure before looping back, even if no notes are playing in the measure.

Another important detail is that looping only works if you start playback before any of the tracks in the sequence have ended. If you have a short track and start playback in the middle of the song, after that track has ended, the short looped track won't play.

To set a track to loop, simply click in the Loop box for the track, at the far right of the Track Sheet window. The Loop icon ↩ will appear in the box. To turn the loop function off, click on the loop box again, and the icon disappears.

playing
a sequence

To play a sequence, first be sure to select the tracks you want to play, and check that the MIDI channels agree on your MIDI devices with the data in the sequence. If you wish, use the transport controls to move the Measure Counter to the point in the sequence where you want to begin playback.

You can start playback in one of three ways:

▶ click on the Play button in the Transport window.

▶ press the spacebar on the Apple //gs keyboard.

▶ assign a key on your MIDI keyboard to start playback. To select the key you wish to use for this purpose, use the Keyboard command on the Goodies menu. See Chapter 13 for details.

Once you start the play function with one of these controls, the sequence will immediately begin to play if the Key and Count In settings on the Transport window are off, and if Sync is set to internal with the MIDI setup command on the Goodies menu.

play options

If Key is on, Master Tracks Pro will pause before beginning to play until it detects that a MIDI key has been played and released.

If Count In is on, you'll get a one measure count-in, and then play will begin.

If Sync is set to MIDI, Master Tracks Pro will wait to begin playback until it receives a Start command from the external MIDI sync source.

During playback, you can change tempo with the scroll bar on the Conductor window.

You can even switch between windows while the sequence is playing, and examine data in any part of any track without interrupting playback.

*recording
a track*

To record a track, first select it for recording by clicking in the Track Sheet window Record box as described earlier. Start recording with one of these three options:

▶ Click on the Record button on the Transport window

▶ Press the Enter key (or Return) on the Apple //gs keyboard.

▶ Play the key on your MIDI keyboard that you've assigned to the Record function. See Chapter 13 for details on how to make the key assignment with the Keyboard command.

At this point, if the Key and Count In controls on the Transport window are off, and if Sync is set to Internal with the MIDI Setup command, Master Tracks Pro will immediately begin to record.

record options

If Key is on, the program will wait until it detects that a MIDI key has been pressed and *released* before it begins recording.
If Count-in is on, you'll get a one-measure count-in (if the metronome is on), and then the recorder starts.
If sync is set to MIDI, Master Tracks Pro will pause until it receives the signal to start from an external MIDI device.

*multi-channel
recording*

Master Tracks Pro can record on all 16 MIDI channels simultaneously. After you've recorded a track containing data on multiple channels, you can use the Strip Data command on the Change menu to move the data for each channel onto its own track. If you wish, however, you can use the Record Filter on the Goodies menu to select a particular channel before you start recording (check Chapter 13 for details on the Record Filter).

If you do select a channel on the Record Filter, Master Tracks Pro will only record the data from that channel, and will ignore any data it receives on other channels. In this case, you'll need to be sure that your synthesizer is set to send on the same channel before you start to record.

Master Tracks Pro can record all types of MIDI data, but you can also use the Record Filter to filter out any types you don't want to record. Again, check Chapter 13 for more details. If you want to separate various types of data after the recording is already complete, use the Strip Data command on the Change menu.

caution: Be cautioned that you should <u>not</u> set the repeat rate in your //gs control panel for "fast"! By doing so you may accidentally go into record because you've held the Return key down too long when exiting a dialog.

stopping   When you've finished recording, click on the Stop button in
record   the Transport window, hit the spacebar on the Apple //gs
keyboard, or play the key on your MIDI keyboard that you've
assigned to the Stop function.
   As soon as you have finished recording a track, the
program automatically activates the track for playback, and
the play icon appears in the track's Play box.

note: It's a good idea to get in the habit of deactivating a track's record mode right after you've recorded it so you don't record over it accidentally next time. Click on the track's Record box in the Sequencer window, so that the circle disappears from the box, protecting the track.

the   The Conductor window is a small but very important Master
conductor   Tracks Pro window. On the Conductor window, you'll see the
window   current values for the tempo, the beat, and the meter, as set
on a special Master Tracks Pro track called the Conductor
track.
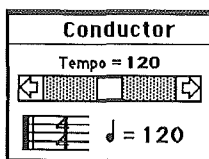
If the Conductor window is not on the screen, or if it is hidden
behind other windows, you can make it visible by choosing
Conductor on the Windows menu.

changing   You can use the tempo scroll bar in the Conductor window to
the   change the tempo, even while a sequence is playing or
tempo   recording. There are three ways to do this:
   ▶ You can click and hold on the scroll box in the scroll bar,
     and drag it directly to a new value.

   ▶ Clicking anywhere in the grey part of the scroll bar
     moves the scroll box rapidly toward that location, and
     causes a corresponding rapid change in the tempo.

   ▶ You can click and hold over one of the arrow controls at
     either end of the scroll bar. This changes the tempo
     value one value at a time.

the
conductor
track

The Conductor track is a separate track in a Master Tracks Pro sequence that determines timing for the entire sequence. The Conductor track allows each measure to have its own meter, tempo, and beat note, and the tempo can change gradually, even within a single measure.

You can think of tempo changes you make in the Conductor window as offsets to the actual tempo value stored in the Conductor track. The play tempo in the Conductor window automatically follows the changes in the Conductor track tempo. When you change the play tempo using the Conductor window scroll bar, all the original tempo changes in the Conductor track are preserved, but they are scaled proportionally to the change you make.

To enter new Conductor track settings for the entire sequence or a given range of measures, you may select the Change Conductor dialog box, either by clicking over the meter display in the Conductor window, or by choosing Conductor... on the Change menu. See the section on changing Conductor values in Chapter 10 for details.
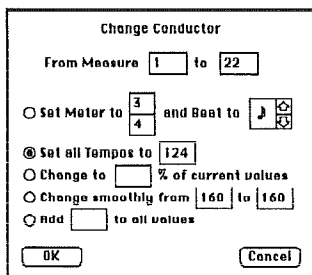
Changes to the Conductor track may also be made graphically using the Conductor edit window from the Windows Menu. See Chapter 7 for details.
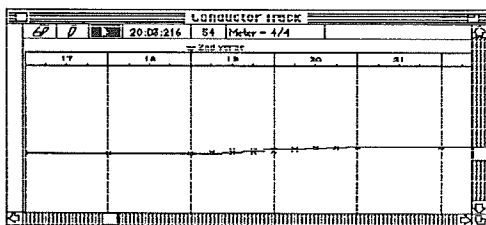
The Song Editor allows you to edit large blocks of music at one time. Working on groups of measures, you can move sections of music within a sequence or build new sequences from segments of other sequences. You can also modify the data in a variety of ways using the commands in the Edit and Change menus.

Select the Song Editor window by choosing it from the Windows menu, or by typing Command–2 on the Apple //gs keyboard.

song editor window

Bar Numbers(measure ruler)   End of conductor track
Empty Measure

Track Numbers

Empty Measure
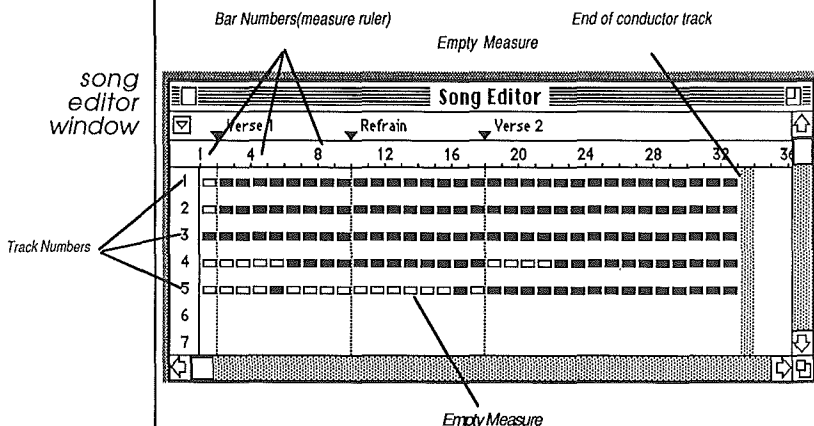
Like the Track Sheet window, the song editor is a table of tracks in which each track is listed on a separate row. But

instead of alpha-numeric information, the Song Editor window provides a graphic representation of the musical data that the track contains, in one-measure blocks.

full/empty
measures

The left border of the window is marked with the track numbers, and the top border is a *measure ruler* which marks off the measure numbers. Tracks containing MIDI data appear on the screen as a row of rectangular boxes, each box representing a measure. Solid black boxes contain MIDI data, while hollow boxes are measures of rests, without any MIDI data.

end of
conductor track

The grey vertical bar at the end of the data area represents the end of the conductor track for the sequence. Even if the tracks you're looking at are completely empty of MIDI data, and no measure boxes are on the screen, the grey bar will still appear at the measure where the conductor track ends.

scrolling
through the
song editor
window

You can scroll through the track data on the Song Editor window using the scroll bars as you would with other Apple //gs programs. You can also scroll using the method described for selecting blocks of measures in the section on "Selecting measures to edit," below.

playback point

Clicking anywhere in the Song Window with Auto OFF, will set the transport to start playing or recording from that point.

the
measure
ruler

The row of numbers at the top of the Song Editor window is the measure ruler. It marks off measures in the sequence so that you can keep track of which part of the sequence you're looking at. You can change the numbering scheme displayed on the measure ruler by pressing one of the number keys 3-0 across the top of the Apple //gs keyboard. If you press 3, every third measure on the ruler (1,3,6,9, and so on) is numbered, while the rest of the measures are indicated by hash marks. If you press 4, every fourth measure is numbered, and so on. Pressing 0 numbers every tenth measure. The "+" key will increment your selection by one and the "-" key will change it back again.

using
song
markers

Master Tracks Pro provides *markers* that let you identify a particular location in your sequence so that you can return to it any time you wish. Markers always mark the beginning of a measure. Master Tracks Pro markers look and act like tab stops in word processing programs.

In Master Tracks Pro, markers are displayed at the top of the Song Editor window, just below the window's title bar, on another horizontal bar called the *marker ruler*. Markers are also displayed in the Step Editor and MIDI Data windows, but you can only place or move them using the Song Editor window.

placing
markers

You'll see a small box at the left edge the marker ruler containing a hollow upside-down triangle. This box is called the *well*. To place a marker into the marker ruler, click and hold over the well. Another upside-down triangle, the marker you'll be placing, will appear just below the well.

Now, while still holding down the mouse button, drag the new marker to the measure where you want to place it. Once you've positioned the marker, release the mouse button. The marker will remain where you've placed it, and will become solid black. In addition, a vertical dotted line will appear below the marker, extending through the track list to help you see exactly where the marked measure is in your track.
You can move the marker any time you're in the Song Window, by clicking and holding on it, and dragging to its new location.

moving to
a marker

To move the Song Editor, Step Editor, or MIDI Data window display to the next marker in the ruler, press the Tab key on the Apple //gs keyboard. The data in the window will move so that the next marker is at the extreme left of the window. Press the Tab key repeatedly until you reach the marker you wish. Only the active window is affected.

To move to a previous marker, press Shift-Tab. Again, the data lines up so that the marker is at the left edge of the window.

In a large composition, you may want to make a note to yourself to help you remember the music each marker is pointing to. Master Tracks Pro helps out by letting you name the markers on the screen. Once you've named a marker, the name appears to its immediate right on the marker ruler.

naming a marker

You can name a marker or change its name from the Song Editor window. Double click on the marker to bring up a dialog box for the marker name. Type in the name from the Apple //gs keyboard, then click on OK or press Return to enter it and return to the Song Editor.

editing MIDI data

The Song Editor lets you easily change MIDI data in large regions using all the commands on both the Edit and Change menus. Again, the smallest unit available for editing changes in the Song Editor window is an entire measure, and all edits are done on multiples of whole measures. Also, the edits you make in the Song Editor window affect all types of MIDI data at once. Commands like Cut, Copy oan Paste from the Edit menu affect MIDI data such as controller data and program changes, as well as note information.

To make changes to one or more measures of your sequence using menu commands, the region of measures must first be *selected.* Selected measures appear on the screen highlighted in inverse video.

selecting measures to edit

To select one or more adjacent measures in a single track (or tracks), click over the first measure in the track(s), and drag over the entire group.
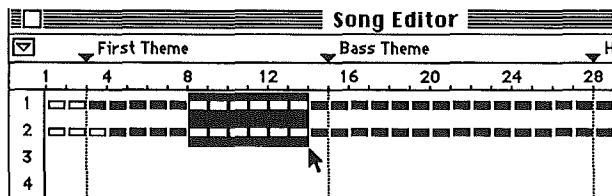
selecting an entire track

To select an entire track, click on the track number in the left hand column. To select several adjacent entire tracks, click and hold over the first track number in the group, and drag the mouse up or down in the track number field.
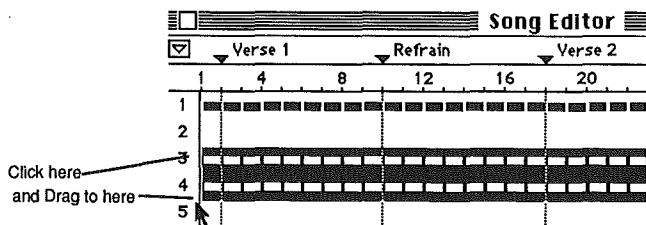
selecting
measures
across all
tracks

To select one measure in all tracks (including the conductor track), click on the column for that measure in the measure ruler at the top of the window.

Click Here
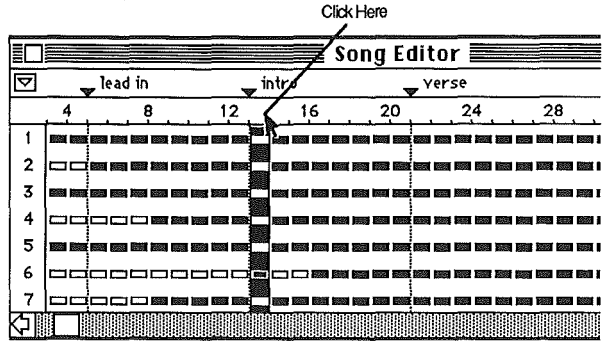
To select adjacent measures in all tracks, click and hold on the column for the first measure in the group and drag to the column for the last measure.

de-selecting
areas

To deselect a selected area, simply click anywhere on the Song Editor window.

selecting a
block of
measures

To select a block of measures across multiple tracks,position the mouse pointer at one corner of the block,click, and drag towards the diagonally opposite corner until the inverse highlight covers the measures you want to select.

shift click

Second, a block can be defined by clicking at one corner of the block, holding down the shift key on the Apple //gs , and then clicking on the diagonally opposite corner.

To define a block that is larger than one screen, you can scroll with the scroll bars after clicking on the first corner, but you must hold down the shift key before you click on the data area again.

note: | If you plan to Cut, Copy, or Clear a region that includes notes that are tied from or to other measures, you should be sure you understand the way Master Tracks Pro handles this situation. Please read the section on tied notes in Chapter 9 for more information.

editing
the selected
music

Once you have selected a measure or measures, you can edit the region using the commands on the Edit or Change menus. See Chapters 9 and 10 for instructions.

playing
a sequence
from the
song editor

Master Tracks Pro lets you play your sequence no matter what window you're using, and the Song Editor window is no exception. Just click on the Transport's Play button or hit the spacebar to start playback.

scrolling during
playback

If you wish, you can set the Song Editor screen to scroll through the sequence data during playback, using the Follow Playback command on the Layout menu. If the Follow Playback command is on, and the Song Window is selected as the active window, a vertical highlight bar moves along the track data to mark the measure that is currently playing.

selecting a
playback point

You can also use the Song Editor to determine at what point the song begins playing. This capability is useful when you want to hear just the part of the song you're working with, and you can also use it as an alternative to the fast forward and rewind buttons on the transport window.

To determine the point at which play begins,first turn the Transport window's Auto control off. With Auto off, and the Song Editor Window active, click in the window at the place you want playback to begin. It's that simple. Once play begins, scrolling the Song Editor window has no effect on what you hear.

moving
to the
step editor

From the Song Editor, you can move directly to the Step Editor to work on any specific measure in any track you wish. Simply double click on that track and measure in the Song Editor window.

Step Editor Window

The Step Edit window is used exclusively for note data. It provides a variety of precision tools that let you input and edit notes in small groups or individually.
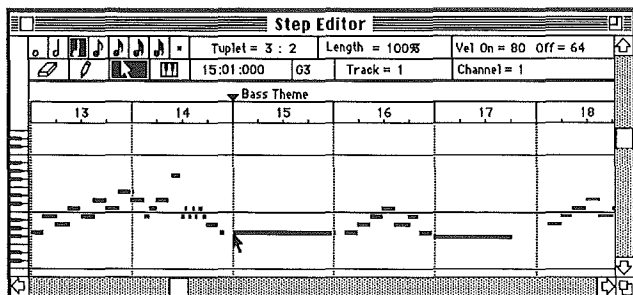
Select the Step Editor window by choosing it from the Windows menu, or by typing Command–3 on the Apple //gs keyboard. You can also open the Step Edit window at a specific measure in a particular track by double clicking on that measure in the Song Editor window.

The Step Editor window is devoted primarily to a graphic display of one track's worth of note events.

The note data itself is displayed in the data area as a sideways player piano roll. Each note is represented as a small rectangle, or *note bar*, oriented horizontally in the data area.

Along the top border of the data area is a *measure ruler*, which marks off the measures and beats in the track. At the left border there's a keyboard graphic to indicate the pitches of the notes in the track.

Just above the top border of the data area is another horizontal bar, the marker ruler. If any markers are set, they'll be displayed here just as in the Song Editor window.

At the top of the window there are two rows of icons and parameter settings, collectively called the menu bar. On the top row of the menu bar, you'll see several note icons, representing the rhythmic values of the notes you insert; a tuplet box; and controls for note articulation and velocity.

On the second menu bar row are several note editing icons, pitch and time indicators, and track and MIDI channel controls.

All of the options on the first menu bar row, along with the channel control, are used only during input of new notes. The remaining options are used in a variety of editing functions.

scrolling the window

As in the Song Editor window, you can scroll through the data in the Step Editor window with scroll bars.

moving to a marker

Just as in the Song Editor window, markers are displayed on a marker ruler near the top of the Step Editor window, and you can move the display to a marker position using the Tab and Shift-Tab keys. However, you can only set the markers in the Song Editor.

zooming in and out

Master Tracks Pro's two Zoom commands let you decide how much of the track data you can see at one time on the Step Editor window. Like a zoom lens, the Zoom commands let you Zoom in or out for different levels of "magnification." You can zoom in to work on small portions of the track more precisely, or zoom out or to see more notes all at once.

To zoom in, choose the Zoom In command from the View menu or press Command–[on the Apple //gs keyboard. To Zoom out, choose the Zoom Out command, or press Command–] on the keyboard.
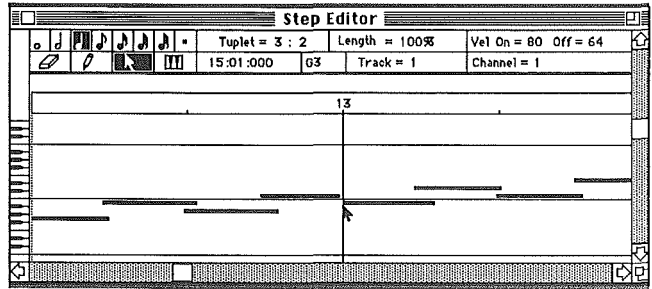
switching to another track

The Step Editor window displays note data from only a single track at a time, and you must switch the display to another track to edit its data. Change tracks by clicking on the Track box. When the change value window pops up, type in the new track number, or click on the arrow controls to change it incrementally.

Click on OK once you've entered the correct number, or press Return on the Apple //gs keyboard. The change value window will disappear, and the new track will be displayed.

playing a sequence

As in the Song Editor window, you can play your sequence while you are using the Step Editor window.

scrolling during playback

At your option, you can have the Step Editor window scroll through the track data while the sequence plays. Choose the Follow Playback command on the Layout menu to enable this feature. As each measure plays, its indicator at the top border of the data area gets highlighted in inverse video. The Step Editor Window must be selected as the Active Window for scrolling to take place during playback. With Follow Playback turned off, the Step Window can be scrolled and examined independently of transport counter position during playback.

playback point	The playback / record start point can be set by clicking with the arrow cursor in the Step Editor Window at the desired location, providing Auto is off, just as in the Song Editor or MIDI Data Windows.
editing note data	Master Tracks Pro gives you powerful control over the step editing process with a variety of editing options. You can select editing regions, just as in the song editor window, and you can also add, delete, edit, move or copy individual notes.
editing regions of notes	With regional editing, you can quickly edit a group of notes all at once. Using the commands on the Edit and Change menus, you can move, copy, or delete the note data, transpose the pitches of all the notes in the region; change MIDI data such as MIDI duration and note velocity; and alter timing in several ways. See the chapters on the Edit and Change menus for more details on these features.
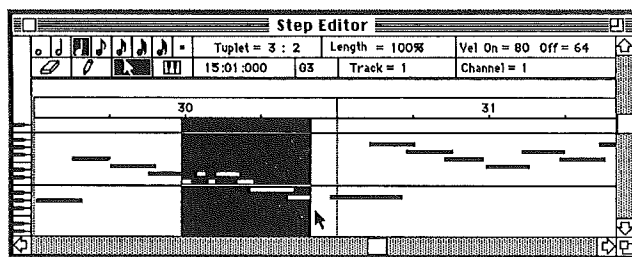
	To edit a region of notes, the region must first be selected using the arrow cursor. On the Step Editor window, a region consists of all notes in the track along a horizontal section of the window, in other words, between two points in time in the sequence. You cannot define regions vertically (by pitch)—all pitches are automatically included in a selected horizontal region.
pitch and time indicators	For many operations, you'll need a way to locate notes precisely in the data area both in terms of time and pitch. That guidance is provided by the time and pitch indicators in the menu bar. This information is also included in the note itself - simply double click on the note and a data window will pop up. See the section on "editing note parameters numerically" later in this chapter.

The time indicator always displays the time value at the current position of the cursor, in measures, beats and clock ticks.

```
≡≡≡≡≡≡ Step Editor
┌──────────────────┐
│  Tuplet = 3 : 2  │
Time ──── 30:04:042 │F#3│
          │
    Pitch ╱
```
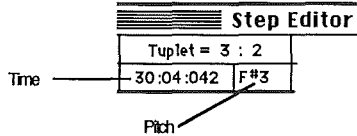
The pitch at the current cursor position appears in the pitch indicator, displayed as a pitch letter name and an octave number. Master Tracks Pro can handle all MIDI pitches, a range from C –2 to G8 (middle C is C3). Accidentals are always displayed as sharps.

choosing
zoom level

Since all editing operations occur on clock tick boundaries, how precisely you can define the beginning and end of a region depends on the Zoom level. At the highest magnification, zoomed all the way in, you can define the region by individual clock ticks (there are 48 clock ticks per quarter note). When you're zoomed all the way out, on the other hand, the resolution is much coarser and the smallest movement of the mouse represents 4 clock ticks, or one twelfth of a quarter note.

No matter which Zoom level you're using, you'll need a way to keep track of where you are in the sequence while you're defining regions. For many editing commands, the measure and beat demarcations in the measure ruler at the top of the step editor window will give you all the information you need to locate the end points of your region. For more precise work however, you can use the time indicator in the menu bar to begin and end the region at exactly the right point.

Notice that as you move the arrow pointer around on the data area, the time indicator changes to show the exact beat location of the current pointer position.

Important: Edit and Change menu commands will only affect notes in the selected region if those notes *begin* in the region. That's one reason to pay attention to the Zoom level while you're selecting a region—a note can appear to be within the selected region when it actually starts slightly before the beginning of the region. You may be zoomed out too far to see this. If the beginning of a note falls within the selected region, the entire note will be altered by the command you use, even if the end of the note isn't included in the selected region.

tied notes

There is an exception to the rules just mentioned, however. Notes in the selected region that are tied over from an earlier measure are recognized by commands such as Cut, Copy, and Clear if the region begins precisely on the measure boundary. See the section on tied notes in Chapter 9 for more detail.

selecting a region for editing

To select a region for editing, choose the arrow pointer on the step editor menu bar by clicking on it. Now, move the pointer into the data area to the left edge of the region you wish to select.

Click and hold the mouse button, drag the pointer to the right edge of the region. You can scroll the screen while selecting a region by dragging the pointer to the right screen boundary. As you select a region, the region becomes highlighted in inverse video.
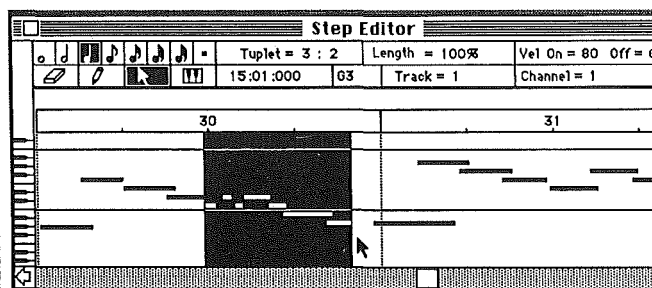
Release the mouse button when you've defined the region as you want it. You can now use the Edit and Change menu commands on the selected region. Clicking in the measure ruler will select an entire measure at a time. You can select an area and then use the scroll bar to scroll to the end of the area you wish to select and hold the Shift key while you click the mouse. This selects the entire area.

inserting new notes

Master Tracks Pro gives you two ways to insert new notes in your sequence: you can use the mouse exclusively, or you can enter the desired pitch by playing the corresponding key on your MIDI keyboard.

*choosing
note
durations*

With either method, you start the process by selecting values for the note's duration, velocity, MIDI channel, and length. Choose the duration, or rhythmic value, you want by clicking over the appropriate note icon at the left side of the menu bar. Selecting the dot icon multiplies the duration of the note value by 1- 1/2.

If you wish, you can select a combination of note values, and all the selected values add together for the total duration of the note you are inserting. To select more than one value, click on the first note type you want to select, and then hold the shift key down as you click on the remaining note types.

tuplets

To enter notes with tuplet values, click over the word "Tuplet" in the tuplet box in the menu bar. When the box is highlighted, any notes you insert will have the tuplet value shown in the box.

```
▁▁▁▁▁▁▁▁▁▁ Step Editor ▁▁▁▁▁▁▁▁▁▁
┌─────────────────┐ ┌─────────────────┐
│  Tuplet = 3 : 2 │ │  Length = 100%  │
├─────────────┬───┤ ├─────────────────┤
│  30:04:042  │F#3│ │  Track = 1      │
└─────────────┴───┘ └─────────────────┘
```

For example, say the value in the tuplet box is 3:2, and you've selected the eighth note duration icon. In this case, with the tuplet command on, the timing of the notes you insert will be adjusted so that three of these notes would fit in the time normally occupied by two regular eighth notes. This is equivalent to eighth note triplets. For a quintuplet you would select 5:2.

You can choose a wide range of tuplet values to create complex polyrhythms or to experiment with other unorthodox note timings. To set a new tuplet value, click over the upper or lower value in the tuplet box. A small Change Value window will pop up, allowing you to change the tuplet value. Then click over the arrow controls to raise or lower the number as you wish, or type in a number from the Apple //gs keyboard.

```
┌──────────────────────────┐
│ Upper Value │ ⬆ │  OK    │
├─────────────┼───┼────────┤
│      7      │ ⬇ │ Cancel │
└─────────────┴───┴────────┘
```

When both numbers are correct, click on OK or press Return to enter them and return to the Step Editor window.

*setting
other
note
values*

Notes you insert in the track in the Step Editor window take on the values displayed in the menu bar for length, on and off velocity, and input MIDI channel. Length refers to the percentage of the note's duration value that it actually plays. By varying the length setting, you can add changes in note length to define phrases or legato and staccato passages. Shorter lengths produce a more staccato effect. The input channel and velocity settings refer to the standard MIDI input parameters.

Before inserting a note, you can change the current settings for these parameters by clicking on the appropriate fields. When you do, the corresponding Change Value window will appear. You can either type in a new value from the Apple //gs keyboard, or click over the arrow controls to raise or lower the value incrementally. Then click on OK or press Return.

*inserting notes
with the
mouse*

To insert notes using the mouse, first select the pencil icon in the menu bar by clicking on it. When you move the pointer to the data area, it becomes a crosshair that lets you position the new note exactly where you want it on the screen.

Using the keyboard graphic at the left of the data area and the measure and beat markings along the top, align the crosshair so that it corresponds to the pitch and time where you want to insert the note. You can also use the pitch and time indicators in the menu bar to locate the position precisely.

When you have the correct position, single click on the mouse. A new note bar will be inserted into the data area at that position, its length corresponding to the duration and length you selected.

*inserting
notes
with a MIDI
keyboard*

Follow the above steps for selecting the note's duration, input channel, and length. Then, select the keyboard icon next to the arrow in the menu bar by clicking on it. Since you're using your MIDI keyboard to enter pitch and velocity data, you don't need a crosshair, and the mouse pointer remains an I-beam cursor when you move it into the data area.

Position the I-beam at the horizontal position where you want to enter the first note. Use the time indicator in the menu bar

for precision. Once you've positioned the cursor properly, click on the mouse to activate the insertion point for MIDI keyboard note entry.

Now you can enter notes by pressing the corresponding keys on your MIDI keyboard. Each time you play a key, a new note bar will appear at the pitch and time you specified, and the I-beam cursor advances to the next insertion point. If you play a chord, (hold down notes while adding additional ones), all it's notes will start at the same time. As you continue to insert notes, the Step Editor window scrolls appropriately. Velocity is recorded with each note and can be adjusted if you like from the Change menu.

rests

Pressing the right arrow on the Apple //gs keyboard inserts a rest corresponding to the note duration that is currently selected.

backspacing to erase mistakes

If you play the wrong key during the pitch entry process, press the left arrow key on the Apple //gs keyboard to delete it. In fact, you can "backspace" all the way back to your last insertion point if you wish.

During the note entry process, you can switch to new note durations with either the note icons on the menu bar, or via the MIDI keyboard using keys you've assigned to duration values with the Keyboard command on the Goodies menu (see Chapter 13 for details).

moving and copying notes

With the move and copy commands, you can transfer all of a note's data, including its duration, channel and velocity to a new location. Of course, the pitch and/or the start time of the note at the new location may be different, depending on where you move the note.

moving the note

To move a note somewhere else in the track, or to make a copy of a note at another location, you'll need the crosshair mouse pointer. To get it, click over the pencil icon in the menu bar, and then move the pointer over the note you want to move or copy. The center of the crosshair must be directly on the note. Although the center of the crosshair can be anywhere along the note's length, it's best to place it precisely at the beginning of the note, so that you can use the time indicator in the menu bar to locate the point where you insert the note with precision.

Now, if you want to *move* the note from its current position to a new one, simply click and hold the mouse button. A dotted border will appear around the note bar, and while you continue to hold the mouse button you can drag this "note ghost" to a new pitch and/or time in the sequence. When the note is correctly positioned, release the mouse button. The ghost will be returned to life as a solid note bar at the new location, while the note bar at the previous location will vanish.

shift click

There will be times you want to shift a note's position in time but not change its pitch, or vice versa. To make these operations easier, Master Tracks Pro provides a way to lock in a note's pitch or start time during a move operation.

To lock in the pitch or start time, hold down the shift key and then click and hold on the note. Now, as you continue to hold down the mouse button, whichever way you first move the mouse locks in the note's position on the other axis.

So, for example, if you first move the mouse horizontally, you've locked in the pitch, and you can't move the note vertically. You can now only move the note horizontally, in time. Except for this detail, the move operation proceeds normally.

copying the note

Copying a note involves essentially the same steps, except that instead of just clicking over the note you want to copy, you must hold down the Option key on the Apple //gs keyboard before you click on the note. Once the "note ghost" border appears, you can release the Option key, and continue by dragging the cursor to the location where you want to insert the copy. When you're in position, release the mouse button, and a new note bar will appear. The original you copied from remains where it was.

erasing a note

You can erase an individual note with the eraser mouse pointer. Click over the eraser icon in the menu bar. When you move the pointer down into the data area, it becomes a crosshair inside a circle.

To erase a note, simply position this eraser cursor anywhere along the note and single click. The note will disappear from the window.

*editing
individual
notes*

Editing commands for single note events allow you to place new notes in your sequence, and to move, copy, or delete existing notes using the mouse. If you need more precision, Master Tracks Pro also gives you a numeric method for altering each note's data.

*editing note
parameters
numerically*

To alter an individual note's pitch, start time, duration, on and off velocities, or channel, select the arrow mouse pointer by clicking over the arrow in the menu bar. Move the arrow directly over the note you want to edit, and double click.

Start Time	Key	On	Off	Duration	Channel	↑	OK
0021:04: 18	64	38	64	0000:00: 62	1	↓	Cancel

grey highlighted note

After a moment, the Edit Note window pops up, and a gray highlight appears over the note being edited so you won't forget which one you're working on.

changing values

To change one of the values in the window, select it by clicking on it to highlight it. Use the arrow controls at the right of the window to change the value incrementally, or type in a new value directly from the Apple //gs keyboard. Master Tracks Pro won't let you enter invalid settings for these parameters, and will only beep if you try.

*change
start time
and duration*

The *Start Time* parameter refers to the point in the sequence that the note begins, in measures, beats, and clock ticks. Rather than setting an end time, however, you use the *Duration* parameter to determine how long the note lasts, again in measures, beats, and clock ticks.

*change
pitch*

You can change the MIDI key number (Pitch) with the arrow controls, or by typing a pitch letter name followed by an octave number, or by pressing the appropriate key on your MIDI keyboard.

*change
velocity*

The On Velocity and Off (release) Velocity are changed with the arrow controls, or by clicking on the value and typing a new number.

change channel

In order to change the output MIDI channel on a note or range of notes, the channel setting in the Track Sheet Window must be set to "0". It can then be changed with the arrow controls, or by typing a new value.

tip

Trying to grab or double-click small (short) notes can be difficult even when you're zoomed all the way in. (For instance some drum machines send notes of only 1 tick duration) To help you edit, you can select the region the note(s) fall in and use "Change Duration" (from the Change menu) and lengthen the note(s). This makes the notes easier to grab or double-click. After you do your editing, you can then change the duration(s) back.

setting the changes

Once all the parameters in the Edit Note window are to your liking, click on OK or press Return to finalize them and close the window. You can click on Cancel instead to return to the Step Editor window without making any changes.

special keyboard commands

You can control the Track Sheet status of the current track from the Step Editor window using special keyboard commands.

Option – P - toggles play / mute
Option – R - toggles record on / off
Option – S - toggles solo on / off
Option – L - toggles loop on / off

Using these Option key combinations saves the bother of making the Track Sheet window active in order to effect playback changes to the track you're working on.

Using MIDI Data Windows

Master Tracks Pro provides six special MIDI Data windows for graphically editing types of MIDI data other than notes on an event-by-event basis. Instead of having to work with a long list of numbers, you can see your data at a glance on the graph, yet you can still edit it with full precision. You'll find separate MIDI Data windows for pitch bend, channel pressure, key pressure, modulation, controllers, and program change data.

Here's an example of a MIDI data window showing aftertouch (Channel Pressure).
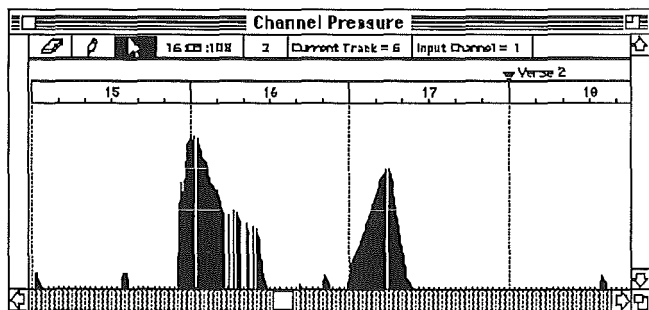
opening a data window

There are two ways to open a MIDI Data window. First, you can choose it from the Windows menu with the mouse. Second, you can open it from the Apple //gs keyboard by typing the Command key along with the number key that corresponds to the window, as follows:

```
┌─────────────────────────────┐
│ Windows                     │
├─────────────────────────────┤
│ Track Sheet         ⌘1      │
│ Song Editor         ⌘2      │
│ Step Editor         ⌘3      │
│.............................│
│ Pitch Bend          ⌘4      │
│ Channel Pressure    ⌘5      │
│ Key Pressure        ⌘6      │
│ Modulation          ⌘7      │
│ Controllers         ⌘8      │
│ Program Change      ⌘9      │
│ Conductor Edit      ⌘0      │
├─────────────────────────────┤
│ ✓Conductor                  │
│ Transport                   │
└─────────────────────────────┘
```

► Pitch Bend   Command–4
► Channel Pressure   Command–5
► Key Pressure   Command–6
► Modulation   Command–7
► Controllers   Command–8
► Program Change   Command–9
► Conductor Edit   Command–0

If the window is open but hidden behind other windows on the screen, you can bring it up to the foreground by choosing it on the Windows menu or with its Apple //gs keyboard command.

All seven of the MIDI Data windows look and work alike, and are very similar to the Step Editor window as well. Most of each window is devoted to a data area, where individual MIDI events appear as vertical lines or points. The height of each line or point corresponds to the numeric value of the event, while the horizontal location of the line or point specifies when in the track the event occurs. You can see event data for one track at a time in the data area.

You can toggle the display from lines to points by presing any key on the Apple //gs keyboard when the MIDI data window is active.

At the top of each window, just below the window title bar, you'll see a single row of icons and data, the menu bar. The three icons in the left portion of the menu bar are used to select different editing operations (see the section below on editing event data).

To the right of the icons, there's a time indicator that displays the horizontal position of the cursor in the track, in measures, beats, and clock ticks. Next there's a value indicator, that gives the data value corresponding to the cursor's vertical location in the data area. Finally come boxes showing which track's data is currently on display, and what channel will be assigned for new event insertions.

Just below the menu bar is a row of mostly empty space, the marker ruler. This is where the markers you've placed in the Song Editor window, if any, will be visible.

Below the marker bar is another horizontal bar, the measure ruler, which marks the position of measures and beats in the track.

scrolling   Use the scroll bar controls to move the MIDI Data window displays just as you would with the Song Editor or Step Editor, or with scrollable windows in other Apple //gs programs. Use the measure ruler to keep track of where you are in the sequence as you scroll.

moving to   You can also move to markers that you placed in the
a marker   sequence on the Song Editor window. Press Tab to move each successive marker. Press Shift-Tab to move to a previous marker. Playback position can be determined by clicking at the desired location in any Midi Data Window, with Auto turned off in the Transport , the same way as in the Song and Step Editor Windows.

zooming   You can use the Zoom In and Zoom Out commands on the
in and out   Layout menu to see more of the MIDI data on screen at a time, or to get a close up view of a small amount of data for precise work.

edit resolution Note that the more you zoom in, the more individual events you can place in the sequence. Zooming in gives you more precise control over the placement of each event, but you can easily use up large amounts of memory, and the sequence is forced to send data much more rapidly. Use the Zoom level that matches your needs for precision, memory, and data density.

Consult Chapter 12 for more details on how to use Zoom commands.

switching
tracks

To view or edit MIDI event data on another track, click over the Track box in the menu bar. A Change Value window pops up, and you can either type in the desired track number from the Apple //gs keyboard, or change it by clicking on the arrow controls in the window. When you've entered the correct track number, click on OK. The Change Value window will disappear, and the Event Editor window will now display data for the new track.

Editing
MIDI
Data

As in the Step Editor window, you use various mouse pointers to make different kinds of changes on events in the various MIDI Data windows.

selecting
a region

To use the commands in the Edit or Change menus on MIDI Data window data, you must first select a region within the track. To select a region for global changes, use the arrow pointer by clicking on its icon in the menu bar. Move the pointer to the left edge of the region you want to select, using the time indicator in the menu bar to help you locate the desired point in the sequence precisely. Then click on the mouse, and drag across the selected region to the right. As you move the mouse, the region will be highlighted in inverse video.

When you reach the right edge of the region, release the mouse button. You can now perform Edit and Change menu operations on the selected region. For the most part, these changes will only apply to the type of data displayed in the window (see the discussion in Chapter 9 on how different types of data are affected by the Edit menu commands in the MIDI Data windows.)

inserting
events

The ability to enter MIDI events graphically is one of Master Tracks Pro's most powerful features. To insert individual MIDI events or modify existing ones, you select the crosshair pointer by clicking on the pencil icon in the menu bar.

Before inserting a new MIDI event, however, you can use the Channel box in the menu bar at the top of the window to select the MIDI channel for the new event. Click on the Channel box to bring up a Change Value window, and enter the desired channel number by typing it in or adjusting it with the arrow controls. Click on OK or press Return to finalize the change.

To insert a single event, move the crosshair to the position in the data area where you want the event to go. Use the time indicator in the menu bar to locate the exact time in the track where you want to insert the event along the horizontal axis of the graph. Use the value indicator to position the cursor vertically for the correct value.

Now simply click the mouse. A vertical line will appear, extending from the graph baseline to the height representing the data value.

inserting
consecutive
events

You can insert multiple consecutive events simply by holding down the mouse button and dragging the cursor to draw a curve on the data area. This makes it easy to add smooth pitch bend or mod wheel changes.

When you insert consecutive events, the graph will appear to be filled in with solid black under the curve you draw. Each event along the curve can still be edited individually.

event
resolution

The Zoom level you're currently using affects how many events are inserted when you draw in a curve by dragging the mouse across the data area. Depending on the Zoom level, each horizontal mouse position can represent as many as 4 clock ticks or as few as 1.

If you're zoomed all the way out when you draw consecutive events, you'll get a new event every 4 clock ticks. When you're zoomed all the way in, you get a new event with every clock tick. Be cautious about entering consecutive events when you are zoomed in, because you can use up memory quickly and you may force the program to send data too rapidly. The Midi Data stream can only support 3120 bytes per second.

A good way to enter a series of consecutive events is to draw them in when you are zoomed out to save memory, and then zoom in to edit them precisely. When you zoom in, you'll see the solid black graph resolve into individual event lines, making it easy to position the cursor.

changing
existing
MIDI
events

To change events that are already stored in the track data, just insert a new event at the same time. When you do, the old event will be erased.

thinning out
dense MIDI
data

If you have a section of MIDI data that is denser than necessary,you can thin the MIDI data by tracing over their curves with the mouse at lower resolutions (Zoomed out).

erasing
events

To erase individual events, click on the eraser icon in the menu bar to select the eraser cursor, a crosshair within a circle. Move the cursor directly over the event you wish to erase and click. The event line will disappear. You can wipe the eraser across a series of events to erase them all.

the
pitch bend
window

Pitch bend data can take either positive or negative values. When a note is not being bent it has a pitch bend value of 0. So in the Pitch Bend window you'll see a horizontal dotted line running through the middle of the data area marking the zero point. The area above the line, which represents positive pitch bend values, is marked with a "+" in the left border. The area for negative values below the line is marked with a "—". Positive values range to +127 and negative values go down to -128.
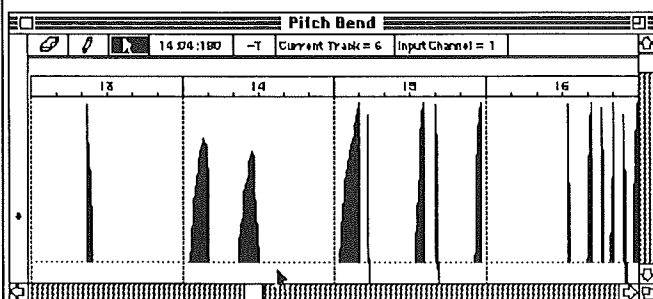
switching
between
line and dot
display

You can switch between two options for displaying pitch bend and other MIDI data. Normally, the data appears as vertical lines. However, if you press any key on the Apple //gs keyboard while you're working with any MIDI Data window, each event is displayed as a single dot in the graph. Pressing another key will toggle back to the normal display.

channel
pressure

Channel Pressure, also known as Aftertouch affects all notes on a given MIDI channel. It has a range of 0 to 127.

key
pressure
window

Key Pressure, also known as "polyphonic" aftertouch, affects individual MIDI notes. To use this parameter, you must first specify the note you want to assign the key pressure event to by entering its pitch in the appropriate box at the far right of the menu bar. A box will pop up, and you can either type in the note's pitch or play the note on your MIDI controller.

The value range for Key Pressure is 0 to 127.

modulation
window

Modulation refers to the "Mod" wheel(or lever) found next to the Pitch Bend wheel on many synthesizers. It is MIDI Controller #1 and you could also edit or create Modulation Data in the Controllers Window. Like many other controllers, it has a range of 0 to 127.

controllers
window

Since MIDI allows multiple controllers, the Controllers window lets you specify the controller number for each event in the window. You must select the controller number before you insert the event (consult the owner's manual of your MIDI device for valid controller numbers and their associated range of values).

Click in the appropriate box at the right of the menu bar. Enter the controller number in the box that pops up, and click on OK or press Return to enter it. Then insert events just as you normally would. You can switch to a new controller number at any time. Refer to the Controllers List in Chapter 14.

program
change
window

The Program Change Window lets you view, enter and edit program changes. Sending a program change on a given MIDI channel will affect all MIDI devices listening to that MIDI channel. Clicking in the data window will pop up the program change dialog (from the Track Sheet). Simply select the number or press the preset on your synth to enter a value. The range of Program numbers is 1 to 128.

conductor track
data window

The Conductor Track Data Window shows a graphic representation of the Conductor Track. Like other MIDI data windows, the tempo values can be edited with the pencil and eraser cursors, but unlike the other data windows, selecting an area with the arrow allows only Change operations to that area in the Conductor dialog box. The other Edit Menu commands are inactive. Tempo changes may be entered on any clock boundary (48 clocks per quarter note). A tempo indicator appears at every measure boundary. These cannot be erased but can be changed with the pencil.
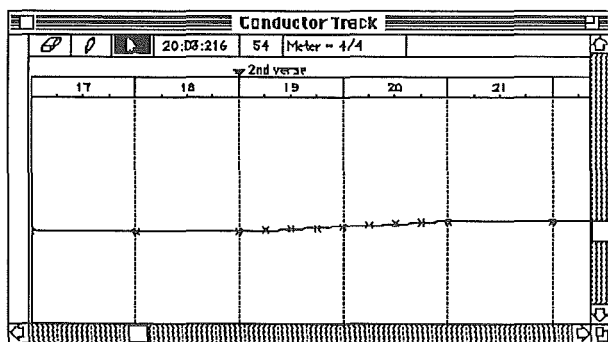
This window is intended as a graphic representation for viewing and allows for very precise editing of the conductor track. Broader editing such as smooth changes over a selected region should be performed in the conductor dialog box from the Change menu. The results will then be visible in the Conductor Track Data Window.

Using the File Menu

3

File
New   ⌘N
Open...   ⌘O
Close Invention 1
Save   ⌘S
Save As...
Revert to Saved
Import MIDI File...
Export MIDI File...
Preferences...
Quit   ⌘Q

The File menu has a variety of commands that let you manage your sequence files. These commands work just as they do in most other Apple //gs applications, so if you've had any previous experience with the Apple //gs you'll already be familiar with how to use them.

The File menu includes the ability to use MIDI Files. MIDI Files are an industry standard format for storing MIDI sequences. If you own any programs that support this new format, you will be able to share sequence files with these programs. You can save your sequence as a MIDI File (Export), or Import a MIDI File created with another program. A Master Tracks Pro file is a single sequence, either in its temporary form in your Apple //gs's memory, or stored more permanently on a disk. A file is *open* when you're working with it in your Apple //gs's active memory, whether you loaded it from disk or started a new sequence from scratch. When you close a file, it is removed from memory, and you can only work on it again by reloading it from the disk.

about
sequence
files

You can only have one sequence file open at a time in Master Tracks Pro. If you're already working on a file, Master Tracks Pro gives you a chance to save it when you create a new file or when you load a file from disk.

Be sure to **save your sequence files frequently while you work with them**, so that you don't lose your work because of a power failure or other problems with your system. You can store files on any disk or drive in your system, as long as there is enough space, using options in the Save and Save As... commands.

To create a brand new sequence, choose the New command on the File menu or press Command-N on the Apple //gs keyboard. Since you can only have one file open at a time, this command closes the file you've been working on, if any, giving you a chance to save it first if you like.

starting
a new
file

When the new file is opened, any windows you had open remain on screen in the same position, but all the existing data disappears. Master Tracks Pro calls the new file "Untitled" until you rename it with a name of your own choice using the "Save As" command (the file name is always displayed in the Transport window title bar).

opening
an
existing
file

Choose the Open command or press Command-O on the Apple //gs keyboard when you want to load an existing disk file into Master Tracks Pro for playback or further editing. When you choose the Open command, Master Tracks Pro will first give you a chance to save the file you're currently working on, if any.

Next, a dialog box will pop up, showing the name of the disk in the currently selected drive at the upper right, and the names of all the Master Tracks Pro files stored on that disk in a scrollable box at the left. If the list of files is too long to fit into this box, you can use the scroll bar at the right side to scroll through the list to the file you want.

If the file you want is on a disk in another drive, click on Disk to select another drive. If you want a file on a disk that's not currently in a drive, Eject, insert the disk you want, then click on Disk to see the contents of the current disk.

Once you've located the file you want to open, click over any portion of the name. The name will now be highlighted, indicating that it is selected. If you make a mistake, you can select a new file name just by clicking on it. When you've selected the correct file, click on Open. The dialog box will disappear, and Master Tracks Pro will load the file.

Another way to open the file is simply to double click on its name when it shows up in the dialog box while you are running Master Tracks Pro.

After the file is opened, the same set of windows you were using before you opened the file will still be on the screen, but the data in the windows will now be from the newly opened file.

closing a sequence file

Use the Close command to end work on a particular file without leaving Master Tracks Pro. When you choose the Close command, you'll be given an opportunity to save your current work if you've made any changes since it was last saved.

All windows you've been using remain on the screen, but they are now empty of data. Essentially, the Close command gives you another way of starting a new sequence.

saving a sequence file

The Save command stores the sequence that's currently open on disk, if an earlier version of the file has already been saved. As soon as you choose the Save command or press Command-S on the Apple //gs keyboard, Master Tracks Pro will save the current version of the sequence in the same disk file, without any further action on your part, overwriting the existing file of the same name.

If your file has not been saved before, or if you haven't made any changes since the last time you saved it, the Save command is disabled and appears in grey instead of black on the File menu. To save a file for the first time, or to resave a file that has already been saved, use the Save as... command instead.
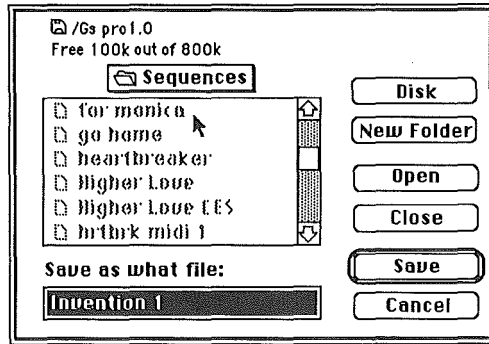
using the
Save as...
command

The Save As... command lets you save a new file for the first time, or resave a file that has previously been saved, using a new name if you wish. You may also save your file on a different disk. In addition to its importance for saving new files, this command is especially useful when you want to store your latest edits as a different file to avoid erasing an earlier version of the sequence.

When you choose the Save As... command, a dialog box appears, which allows you to choose a name for the file before you save it. The field where you enter the file name is labeled "as what File:." If you're saving a new file, the program will supply the name "Untitled" in the file name field. If you're saving a previously saved file, the current name of the file appears in the file name field.

If you want to change the name supplied by the program, type in the new name. If you leave the file name field highlighted, the name in the field will disappear as soon as you start to type in the new name.

The Save As... dialog box also lets you select the drive and disk where you want to store the new version of the file. At the top of the box, you'll see the name of the disk in the currently selected drive. Eject this disk. When the disk pops out, insert the disk you want to use. Click on Disk to use your new disk for the save operation.

If you decide you don't want to save the file after all, you can click on Cancel at any time. To go ahead and save the file with its new name, click on Save. After a few moments, you'll be returned to the main Master Tracks Pro screen.

using the
Revert to Saved
command

Choosing the Revert to Saved command loads the disk version of the file that you're currently working on, restoring the file to the way it was when you last saved it. Use this command when you've made changes in a sequence that you know you don't want to keep.

When you choose the Revert to Saved command, Master Tracks Pro pops up a dialog box asking you if you're sure that you want to discard the changes you've made since the last time you saved the file. If you want to go ahead with the command, click on Yes, and the last saved version of the file will be loaded, replacing the data that was in memory. To cancel the command, click on Cancel.

importing and
exporting
MIDI files

MIDI Files are an industry standard format that has been adopted by many software and hardware manufacturers. This allows you to use Master Tracks Pro to play or edit files created on other sequencers or to use your Master Tracks Pro files with other sequencers or notation programs. Both types of MIDI Files are about 35% smaller than a normal Master Tracks Pro file and thus take less room on your disk and less time to transmit by modem.

When you select EXPORT from the File menu, a dialog box gives you the choice of type 1 or type 0. When you select IMPORT from the File menu, Master Tracks Pro will display any MIDI files on current disks.

Type 0	All channels merged to a single multi-channel track. Channel assignments saved Text and program change assignments <u>not</u> saved. Loop assignments and markers not saved.
Type 1	Parallel multi- channel tracks. Channel assignments saved. Text and program change assignments saved. Loop assignments and markers not saved.

quitting
Master Tracks
Pro

Choose the Quit command or press Command - Q on the Apple //gs keyboard when you want to end a Master Tracks Pro session. If you haven't saved the file you've been working on when you choose the Quit command, Master Tracks Pro gives you a chance to do so via a dialog box with the message "Save changes before quitting?"

Click on Yes or press Return to save the final version of the file before quitting. Click on No if you want to quit without saving the file. If you decide not to quit after all, click on Cancel.

Master Tracks Pro's Edit menu contains commands that are used within the Song Editor, Step Editor, or MIDI Data windows to edit MIDI data in selected measures or regions.

Edit	
Undo Paste	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘U
Clear	
Mix Data	⌘M
Insert Measure...	⌘I
Select All	⌘A
Show Clipboard	

To use any of these commands on a specific region, the region must first be selected using the mouse as described in the chapters on the Song Editor, Step Editor, and MIDI data windows. If you want to use an Edit command on an entire sequence or track, you can skip that step by using the File menu's special command, Select All. This command selects the entire sequence at once if chosen when the Song Editor is the active window. If the Step Editor or a MIDI Data Window is active, one entire track will be selected. See the description of the Select All command later in this chapter for details.

The Edit menu capabilities start with basic Cut, Copy, Paste, and Undo editing commands, much like those you'll find in other Apple //gs programs. With Cut, Copy, and Paste, and a couple of supplemental commands, you can transfer data from any location in a sequence to any other location, or even to another sequence entirely.

Before covering the Edit menu commands individually, there are a few things that you'll want to know about. One thing to be aware of is that some of the Edit commands work slightly differently depending on which window you're working with. Those differences are described with each of the commands.

working with
tied notes

There will probably be times when you'll want to select regions in the Song Editor or Step Editor windows that include notes tied from the measure immediately before or after the selection. If the selected region begins on a measure boundary, Master Tracks Pro will recognize the tied notes when you use the Edit menu commands Cut, Copy, and Clear.

When you use one of these commands, the program removes or copies only the portion of the note that falls within the measures in which the selected region is located. With the Cut and Copy commands, this portion of the note is moved to the clipboard, and appropriate note–on and note–off events are added to it to make it a complete event. When you use Cut or Clear, the program also removes this portion of the note from the sequence, and inserts new note–on and note–off events for the parts of the note that remain.

about
the
clipboard

The *clipboard* is the temporary storage location for MIDI data that Master Tracks uses when you move or copy within a sequence, or from one sequence to another. For faster performance, the Master Tracks Pro clipboard is stored in RAM, the computer's internal memory, and not on disk like some Apple //gs clipboard files. The effect of this is to speed up editing considerably. But there is a trade–off. The problem with this approach is that the data in the clipboard will be lost if you lose power or the computer fails for some other reason. Don't expect the clipboard file to be saved when you power down your computer. You must paste it into a sequence and save it using the File menu commands.

*the
Undo
command*

At the top of the Edit menu is the Undo command, which can also be executed by pressing Command–Z on the Apple //gs keyboard. This command allows you to cancel the last alteration you made to your sequence with the commands on the Edit or Change menus. You may also Undo your most recent recording. Remember, though, that Undo only applies to the last change you made in the sequence. As soon as you use another Edit or Change command or start recording a new track, the change is now pemanent and can no longer be removed with Undo.

cutting

Use the Cut command to remove MIDI data from the region you've selected, and place it in the Master Tracks Pro clipboard. You can execute the Cut command by choosing it from the Edit menu, or by pressing Command–X on the Apple //gs keyboard.

The exact way that data is removed by the Cut command depends on how you've selected the data:

▶ If you've selected one or more entire tracks in the Song Editor window, the Cut command removes their data entirely.

▶ If you've selected the entire sequence using the Select All command, or with the mouse in the Song Editor window, Cut removes all data.

▶ If you select one or more adjacent measures across *all* tracks in the sequence, the measures are completely removed and the remainder of the sequence is shifted to the left to fill in the gap.

▶ If you select a region within a track or tracks, but not all tracks in the song, Cut removes the data but leaves the measures intact. In other words, the rest of the data in the track(s) is *not* shifted to the left to fill in the gap. This is done to preserve the Conductor template across all the tracks. After this sort of cut, you'll see hollow measure bars indicating empty measures in the Song Editor window.

Remember, a Cut command can be reversed with the Undo command.

Cut command specifics

The Cut command and the various windows:

▶ On the Song Editor window, Cut works on all data types in the selected region.

▶ On the Step Editor window, Cut works only on note data.

▶ On a MIDI data window, Cut works only on the type of data displayed in that particular window.

copying

The Copy command makes a copy of the data in the selected region and puts it in the Master Tracks Pro clipboard. The existing data is not changed. In addition to selecting the Copy command with the mouse, you can also execute it by pressing Command–C on the Apple //gs keyboard.

The Copy command's effect varies, depending on which window you are working in:

▶ On the Song Editor window, Copy copies all data types to the clipboard.

▶ On the Step Editor window, Copy only copies note data.

▶ On a MIDI data window, Copy only copies the type of data displayed in the window.

pasting

Paste places the contents of the clipboard into the sequence beginning at the location of the blinking cursor. You can choose the command with the mouse, or use Command–V from the Apple //gs keyboard.

If the clipboard contains data from more than one track, data from the lowest numbered track in the clipboard goes into the track marked by the cursor. Data in the clipboard from subsequent tracks are automatically inserted into the next tracks in order.

To use Paste, first select an insert point by placing the cursor at the beginning of the measure where you want to insert the clipboard data. Then select the command. <u>The data you paste in replaces any existing data in the sequence</u>. (To merge the clipboard data with the existing data, use the Mix Data command.)

You can paste data into empty tracks anywhere you like. Just position the cursor at the measure location where you want the pasted data to start, and execute the command. Remember, too, that you can Paste clipboard data from one sequence to an entirely different sequence if you wish.

The Paste command works with the various windows as follows:

▶ On all windows, Paste places all the contents of the clipboard into the track, even if the clipboard includes data of another type than displayed in the active window.

▶ On the MIDI data windows, paste will only place the type of data cut or copied to the appropriate Data Window. (see Change Continuous to move from one Data type to another)

▶ On the Step Edit and MIDI Data windows, if the clipboard contains data from multiple tracks, you'll place data from the lowest # track only.

clearing   Clear works exactly like Cut, except that the data is removed without placing it in the clipboard. This gives you an alternative way to remove portions of your sequence. You may find it useful when you want to remove data from your sequence, but you don't want to erase the contents of the clipboard.

To use the Clear command, choose it from the Edit menu after you've selected the region you want to clear. Alternately, you can simply press the delete key after selecting a region.

The Clear command and the various windows:

► On the Song Editor window, Clear removes all data types.

► On the Step Editor window, Clear only removes note data only.

► On a MIDI data window, Clear only removes the type of data displayed in the window.

mixing data

The Mix Data command works identically to the Paste command, except that the data in the clipboard that you're inserting in the sequence is merged with existing data already in the sequence.

To use the Mix Data command, first place the blinking cursor to the left of the first measure in the block where you want to place the clipboard data. Then choose the Mix Data command from the Edit menu, or type Command–M on the Apple //gs keyboard.

► Only one track can be mixed at a time with another. So if you want to "bounce down" several tracks to a single track, you must do them one by one.

inserting measures

With the Insert Measure command, you can lengthen the sequence by adding empty measures within it. You might use this command to insert a new section into the middle of a composition or to add a blank space or countdown to the beginning.

You can use the Insert Measure command from the Song Editor, Step Editor, or MIDI data windows. No matter which window you're working in, you may insert measures in all the tracks in the sequence, or only a single track. The newly inserted measures will all have the same meter and tempo as the last measure prior to the inserted section. Use the Change Conductor command in the Change menu to alter these timing settings.

When you choose Insert Measure, or type Command-I on the Apple //gs keyboard, a dialog box pops up on screen. Type in the number of measures you wish to insert, and if you wish to affect all tracks or just a single track. Click on OK or press Return to confirm your entry. Click on Cancel to return without inserting measures.

```
+-----------------------------------------------------+
|                   Insert Measure                    |
|                                                     |
|   Insert [ 1  ] measure(s) before measure 14.       |
|                                                     |
|   (*) All tracks                                    |
|   ( ) Only on track [ 1 ]                           |
|   +----------+                      +----------+     |
|   |    Ok    |                      |  Cancel  |     |
|   +----------+                      +----------+     |
+-----------------------------------------------------+
```
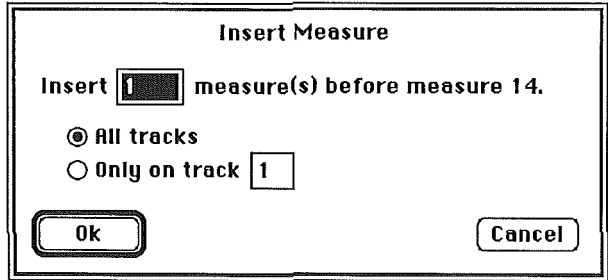
The steps you'll take to use the Insert Measure command vary slightly depending on whether the Song Editor window or the Step Editor window is currently active.

In the Song Editor window, place the cursor at the beginning of the measure before which you want to insert the new measure(s). After executing the command, the new measures will appear on the screen as hollow measure boxes, indicating they are empty of MIDI data, with the cursor positioned at the beginning of the first measure in the inserted group. All the remaining measures in the sequence will have been pushed to the right and renumbered.

For example, say you want to insert two measures beginning after the eighth measure in the sequence, and just before what's now the ninth measure. Place the cursor between the eighth and ninth measures and select the Insert Measure command. Once you've completed the insertion, the newly inserted measures will be measures nine and ten, while what was formerly measure nine will now be measure eleven.

In the Step Editor window, use the arrow pointer to select any region in the measure before which you want to insert the new measure(s), and then give the command. After a brief

pause, you'll see the new empty measure(s) on the screen, and the remaining measures will be renumbered to reflect the insertion.

select all

The Select All command lets you select the entire sequence or track for use with the editing commands. From the Song Editor window, just choose Select All from the Edit menu, or type Command–A on the Apple //gs keyboard - the entire song will be selected.

In the Step Editor and MIDI data windows, Select All selects the entire track you're working with.

show/hide clipboard

Show Clipboard pops up a small window which describes the current contents of Master Tracks Pro's clipboard. The window tells you which tracks and bars the data was copied from, how long the data lasts in bars (measures), beats, and clock ticks, and whether the data was cut or copied.

```
┌─────────────────────────────┐
│         Clipboard           │
├─────────────────────────────┤
│ Data was copied:            │
│                             │
│ From: Track 1               │
│        Bar 4 Beat 1 Clock 0 │
│                             │
│ Thru: Track 2               │
│        Bar 7 Beat 4 Clock 39│
│                             │
└─────────────────────────────┘
```
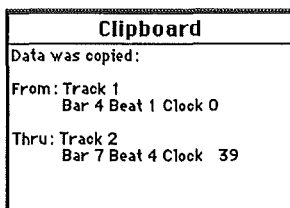
The Clipboard window remains on screen until you close it, although it's likely to get buried under other screen windows. If you like, you can leave the clipboard window open on the screen. If it gets hidden behind other windows, however, you must either move or close them to see the clipboard window again, or choose Show Clipboard from the Edit menu.

 While the Edit menu commands let you move or delete
regions of notes, the Change Menu contains commands that
allow you to regionally alter MIDI and timing data in many
sophisticated ways. All of the Change menu commands work
on any region you select in the Song Editor, Step Editor, or
MIDI data windows.

Included are commands for changing note duration, note
velocity, continuous MIDI data, and tempo and meter in the
selected region. There are also commands for stripping
different types of data out of a track, transposing pitch, and
for changing the rhythmic relationships of MIDI events.

> **Change**
> Duration...
> Velocity...
> Continuous...
> Conductor...
> Strip Data...
> Transpose...
> Humanize...
> Quantize...

As with Edit menu commands, you must first select a region
before you can use the Change commands. To select a
region, use the mouse as described in the chapters on the
Song Editor, Step Editor, and MIDI data windows.

change
duration

Choosing the Duration... command pops up a dialog box that allows you to alter the duration of each note in the region— how long it plays.
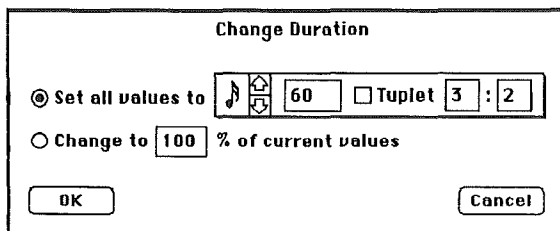
The dialog box gives you two choices for changing note durations.

The first option in the box lets you set all notes in the region to a specified duration. Activate this option by clicking in the circle next to it. A solid black dot appears within the circle when the option is selected.

Next, select the duration you wish by using the arrow controls to choose the appropriate note duration icon.

To select a tuplet resolution, click on the box next to "Tuplet," and enter the tuplet values you wish by clicking on the appropriate boxes and typing in the new numbers.

Based on the duration you choose, the number of clock ticks each note will receive in the region appears in a box to the right of the arrow controls. If you prefer, you can type in any duration value, expressed in clock ticks, you wish into this box.

Change Duration

⊙ Set all values to ♪ ⬆⬇ 60   ☐ Tuplet 3 : 2

○ Change to 100 % of current values

OK   Cancel

The second option in the Change Duration dialog box allows you to scale all duration values in the selected region by a percentage of their current values. Again, click on the circle beside this option to select it, so that the solid black dot appears. Now type in the percentage of the current duration values, within the range of 1 to 999%, you wish to use. With this option, the relative timing of all the notes is preserved.

After selecting the option you wish, Click on OK or press Return to complete the command, or click on Cancel to return to your work without making any changes.

change
velocity

The Dialog box that pops up when you choose the Velocity... command lets you change the velocity values for all notes in a selected region.

Change Velocity

⦿ On Velocities   ◯ Off Velocities

⦿ Set all velocities to │64 │

◯ Change to │ │ % of current values

◯ Change smoothly from │25 │ to │96 │

◯ Add │ │ to all values

[OK]   [Cancel]

Changing velocity is useful for adding punches to a track or to mix the loudness of a track or passage relative to other tracks. It can also be used to bring velocity values up or down over time to create swells, crescendos, and decrescendos.

First, you need to decide whether your changes will apply to note-on velocities, note-off velocities, or both. Click over the circle to the right of one or both of these choices in the dialog box. Please note that many synthesizers do not transmit or recognize note-off velocities.

Next, you can decide from among four options for altering the velocity values. Click over the circle next to the option you select:

1. You can set all velocity values in the region to a specific value.

2. You can change all velocity values by a specific percentage.

3. You can have all velocity values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.

4. You can add or subtract (with a minus value) a set amount to all velocity values in the region.

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen. Click on OK or press Return to enter the value.

Valid MIDI velocity values are between 1 and 127. A velocity value of "0" is the same as a "note off" command. If you enter a velocity value below 1 or above 127 in options 1 or 3 above, Master Tracks Pro will tell you that the value is out of range. You'll then be returned to to the Change Velocity dialog box with a highlight on the invalid value. If the values you've entered in options 2 or 4 throw existing velocity values out of the valid range, Master Tracks Pro will clip them to 1 or 127 as appropriate.

change
continuous

Choosing the Continuous... command brings up a powerful dialog box that lets you alter data from any continuous MIDI controller, such as a pitch bend wheel, a modulation wheel, aftertouch (channel pressure), or any numbered MIDI controller. You can use this command to map data from one MIDI controller to another, change the values of the controller data, or both.

```
╔══════════════════════════════════════════════╗
║          Change Continuous Data                ║
║                                                ║
║   Select Data Type        ☐ Map Data Type To   ║
║   ○ Pitch Bend              ○ Pitch Bend        ║
║   ○ Modulation              ○ Modulation        ║
║   ○ Channel Pressure        ○ Channel Pressure  ║
║   ◉ Controller # [    ]     ◉ Controller # [    ]║
║                                                ║
║   ☒ Change Data Values                          ║
║     ◉ Set all values to [        ]              ║
║     ○ Change to [    ] % of current values      ║
║     ○ Change smoothly from [    ] to [    ]     ║
║     ○ Add [    ] to all values                  ║
║                                                ║
║   ( OK )                         ( Cancel )     ║
╚══════════════════════════════════════════════╝
```

mapping
data

By mapping one type of MIDI data to another type, you can send data recorded from one controller to a MIDI device that responds to a different controller. For instance you can map channel pressure information to mod wheel if you like.

To map one data type to another, first select the type of data you wish to operate on in the selected region from the choices listed under "Select Data Type" at the top of the dialog box. Click on the circle next to the choice you select so that a smaller solid black circle appears. If you've chosen the Controller # option, you must also type in its number in the corresponding box.

Next, click in the box labeled "Map Data Type To" at the right of the dialog box. An "X" will appear in the box. Now choose the data type to which you want to map the existing data by clicking in the circle next to your choice. Again, you must type in a number if you select the Controller # option. See Chapter 14 for a list of Controller numbers.

changing data values

To change data values, you must first select the type of data you wish to work on, if you haven't done so already, as described above. Next, click in the box labeled "Change Data Values" so that an "x" appears in the box. You now have four choices:

1. You can set all values in the region to a specific value.

2. You can change all values by a specific percentage.

3. You can have all values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.

4. You can add or subtract (with a minus value) a set amount to all values in the region.

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen.

If you are mapping data to another controller at the same time you are changing data values, the changed values will apply to the controller to which you are remapping the data. Once you've made all your choices, click on OK or press Return to complete the command. Click on Cancel at any time to exit the dialog box without making any changes.

note:

If there is no controller data present in the track to change, changing data values will have no effect on the track. There must be at least one data value either recorded or inserted (entered) in order for a change to occur.

*change
conductor*
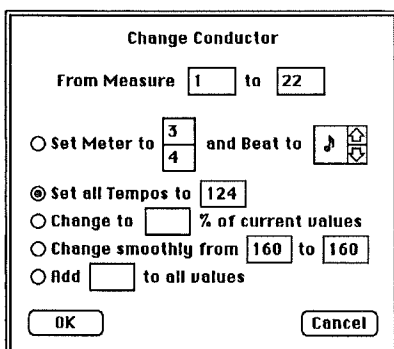
Master Tracks Pro has a separate Conductor track with which you can determine the rhythmic structure of your entire sequence. All tracks in the sequence follow the settings in the Conductor track for meter, tempo, and the type of note that gets the beat, but you can vary these settings from measure to measure as often as you like. You can even change tempos gradually for ritardandos and accelerandos.

The vertical grey bar in the Song Editor window represents the end of the Conductor track.

Choose the Conductor... command on the Change menu to bring up the Change Conductor dialog box.

note: You can also access the Change Conductor dialog box from the Conductor window by clicking on the time signature in the window.

```
┌─────────────────────────────────────────┐
│            Change Conductor              │
│                                          │
│    From Measure [1]  to  [22]            │
│                                          │
│                      3                   │
│    ○ Set Meter to  ───  and Beat to [♪] [⇧⇩] │
│                      4                   │
│                                          │
│    ◉ Set all Tempos to [124]             │
│    ○ Change to [    ] % of current values│
│    ○ Change smoothly from [160] to [160] │
│    ○ Add [    ] to all values            │
│                                          │
│    ( OK )                    ( Cancel )  │
└─────────────────────────────────────────┘
```

Unlike other Change menu commands, you don't have to select a region before you use the Conductor command. If you have selected a region, however, the first and last measures in the region will appear in the appropriate boxes at the top of the dialog box. You can define a new region by typing in different measure numbers.

*changing
meter*

If you wish to set the meter or beat note for the region, click on the circle next to that option in the dialog box. Then type in the new meter values. Select the note icon for the beat note with the arrow controls at the right. In 4/4 time, if a quarter note beat is selected, you will hear 4 beeps per measure from the metronome with an accent on each first beat and you will

see four main divisions in each measure in the Step Edit Window. If you change the beat to an eighth note, you will now hear 8 beeps per measure and see 8 main divisions per measure. Tempo will now be half speed since it is measured in "beats" per minute so you may wish to double the tempo for this region.

You have four options for setting a new tempo in the region:

1. You can set all tempo values in the region to a specific value.

2. You can change all tempo values by a specific percentage.

3. You can have all tempo values in the region change smoothly from one value at the beginning of the region to another value at the end of the region.

4. You can add or subtract (with a minus value) a set amount to all tempo values in the region.

tempo range

After selecting which of these four options you wish, click on the appropriate data box(es) for that option and type in the value or percentage you've chosen. The range of permissible values for tempo setting is 10 to 300 with beat set to quarter note, but with beat set to sixteenth note, tempos can be up to 1200 BPM. If you enter a value outside this range with option 1 or 3, Master Tracks Pro will highlight the illegal value and ask you to change it before you can return to your work. Any existing tempo values changed by options 2 or 4 so that they are out of range will be truncated to the maximum or minimum values.

Click on OK or press Return to complete the Conductor command. Click on Cancel to exit the dialog without making any changes.

conductor template

The Conductor track allows you to have multiple meters in the same song. One way to use multiple meters is to create the rhythmic structure of your sequence with the Conductor track before you record any music. The Conductor track is equivalent to a "tempo map" and a "meter map" combined into a single structure. Use the Conductor command to define meter and tempo for each section in turn. Once you've created this Conductor template, you can record your music,

and the program will automatically shift meters at the correct measures as you record.

To see how this process works, try this example: First, select New from the File menu to clear the Apple //gs's memory. Now choose the Conductor command from the Change menu. Set bars 1 to 4 to a 4/4 meter at 100 beats per minute with a quarter note beat. Now choose the Conductor command again, and set bars 5 to 8 to 3/4 at 140 beats per minute. Choose the command a third time, and set bars 9 to 12 to 2/4 at 80 bpm.

In the Song Editor window, you'll now see that you have a 12 bar score. If you move the transport with the fast forward button, or "play" the empty sequence, you'll see the tempo and meter settings in the Conductor window change as you reach each new section of the Conductor track. You can view the Conductor track graphically by pressing Command–0 or choosing Conductor from the Windows menu.

If you wish, you can save a Conductor track template as a disk file before you enter any music, and use it for as many separate sequences as you like.

strip data

The Strip Data command lets you cut or copy selected types of MIDI data from the edit region. Among the types of data you can cut or copy are data from a particular MIDI channel, various types of MIDI controller data, or a range of notes.

You can select any combination of these data types each time you use the Strip Data command. For example, you could copy only notes above middle C and pitch bend data, both from channel #4.

The selected data types are cut or copied to the clipboard. You can then place them back into your sequence anywhere you like using the Paste or Mix Data commands on the Edit menu.

By selecting various ranges of notes, you can use the Strip Data command to create as many keyboard "splits" as you like. The command can also help conserve memory by removing unnecessary controller data (such as unintentional channel pressure or aftertouch) while leaving other data intact.

Select a region and choose Strip Data... from the Change
menu. Click in the box or boxes next to the data type(s) that
you wish to cut or copy with the command. If you select the
Controllers option, you can either cut or copy all numbered
MIDI controllers, or you can select a specific controller
number.

Similarly, you can either select all notes in the edit region, or
only notes in the range you enter. To enter note pitches to
define the range, you can either type in the pitch or play the
corresponding key on the MIDI keyboard. If you type in the
pitch, enter the pitch letter name, a # sign if the pitch is an
accidental, and the octave number.

note: Valid pitch range is from C-2 to G8.
All accidentals *must* be entered as sharps.

Finally, decide whether you want to cut or copy the selected
data types, and click in the circle next to the option you
choose. If you select Cut, the selected data types in the
region will be removed from the sequence and placed in the
clipboard. If you select Copy, a copy of the data will be placed
in the clipboard, while the original data remains intact.

Strip Data

☐ Only on channel ⬚1

☒ Pitch Bend   ☒ Modulation
☒ Channel Pressure   ☒ Program Change
☒ Polyphonic Key Pressure
☒ Controllers
　 ○ Only controller # ⬚0
☒ Notes
　 ○ Only notes between ⬚C-2 and ⬚G8

[　OK　]   ⦿ Cut   ○ Copy   [Cancel]

When you've finished making all your selections in the Strip
Data dialog box, click on OK or press Return (or Enter) on the
Apple //gs keyboard. Click on Cancel instead to exit without
making any changes.

additional method for copy/cutting data

Another way to cut or copy specific types of MIDI data is to perform the operation from the Step Editor or MIDI Data windows. When you use the Edit menu Cut or Copy in those windows, only the data type you're currently working with is transferred to the clipboard.

transpose

The Transpose command changes the pitch of all the notes in the selected region from one key to another. The Transpose command recognizes individual clock ticks, so you can use it on regions that include portions of measures.

```
┌─────────────────────────────────────────┐
│              Transpose                   │
│                                          │
│  Transpose notes from │C3│ to │C4│       │
│                        ___               │
│   ┌──────┐            │⌂│    ┌────────┐  │
│   │  OK  │            │⌄│    │ Cancel │  │
│   └──────┘            ‾‾‾    └────────┘  │
└─────────────────────────────────────────┘
```
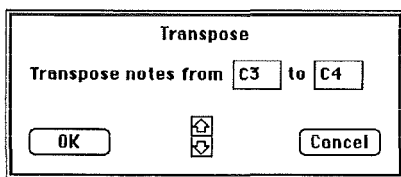
When you choose this command, a dialog box appears, and you are asked to enter the key from which you are transposing, and the new key to which you want to transpose.

To enter these keys, click on the appropriate box, and then type in a pitch letter name, a # sign if you're entering an accidental, and the octave number or play the appropriate note on your MIDI keyboard. Valid pitches range between C-2 and G8. You must enter all accidentals as sharps.

Press Return or click on OK to enter the transposition and return to your work. Click on Cancel to exit without making any changes.

humanize

The Humanize command is designed to make your sequence less machine-like and rigid by randomly shifting the start time, duration, and/or velocity of each note in the selected region.

```
┌─────────────────────────────────────────┐
│              Humanize                    │
│                                          │
│  ☐ Randomize start times within │   │ clocks │
│  ☐ Randomize durations within   │   │ clocks │
│  ☐ Randomize velocities within  │   │ values │
│                                          │
│   ┌──────┐              ┌────────┐       │
│   │  OK  │              │ Cancel │       │
│   └──────┘              └────────┘       │
└─────────────────────────────────────────┘
```
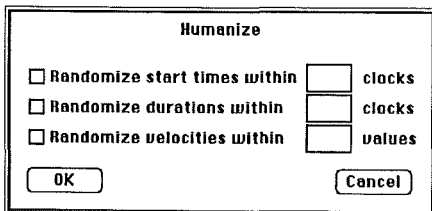
When you select the Humanize command, a dialog box appears that lets you choose whether to apply the randomization effect to start times, durations, or velocities. Click on the box next to each option you want to select. Next, you must enter a maximum value to tell the program how large the random changes can be. The Humanize command will add or subtract a random amount from each note in the region, but only within the range set by this value. In the case of start times and durations, type in the maximum number of clock ticks that will be added or subtracted to existing values when the Humanize command goes to work. For velocities, the maximum value is simply a numeric value between 1 and 127.

In practice, very small values work best for achieving subtle variations in highly mechanical music. Large values will produce wide and random changes that are sometimes useful, but not at all predictable.

When you've made your selections, click on OK or press Return to enter them and complete the command. Or click on Cancel to exit without making any changes.

quantize

The Quantize command aligns the start times of all notes and other MIDI events in the selected region to an imaginary timing "grid." The grid divides the region into intervals of a set number of clock ticks. When you use Quantize, the start time of every note is moved within the region so that it falls precisely at the begining of the nearest grid interval. You can choose to Quantize the entire note or just the attack times, leaving the note offs at their current locations. This could be used to create a more accurate rhythm while preserving release times of envelopes on synthesizers.

Of course, you'll usually quantize to a grid based on a standard note type, such as to the closest quarter or sixteenth note. But Master Tracks Pro gives you the freedom to quantize to any interval you wish.

percentage
ahead of
the beat

Master Tracks Pro defaults to a Quantize setting of 35% ahead of the beat. In other words, if you are quantizing to 16th note values, it will include (shift, align) any notes which fall from 35% before the current 16th note and up to 65% behind the current 16th note. If a note falls more than 35% early, it will be quantized to the previous 16th note position.

This range can be adjusted to your specific situation by entering a different value in the percentage box. If you tend to

rush a particular passage you may wish to set the range to
include notes that fall a larger percentage ahead of the beat.
The intensity (degree) of quantization is also adjustable. It
has a default value of 100 %, meaning that notes will be
quantized fully to the note or tick interval you specify. An
intensity setting of 50% would move notes only half the
distance to the nearest specified interval.

```
┌─────────────────────────────────────────────────┐
│                     Quantize                     │
│                                                  │
│        ○ Entire note  ⦿ Attacks only             │
│                                                  │
│  ⊠ Quantize to  [♪][⬦]  [60]  □ Tuplet [3] : [2] │
│                                                  │
│     Include notes up to [35] % ahead of the beat.│
│     Intensity [100] %                            │
│                                                  │
│  □ Slide notes [0]  clocks to the ○ left ⦿ right │
│                                                  │
│        [   OK   ]              [ Cancel ]        │
└─────────────────────────────────────────────────┘
```
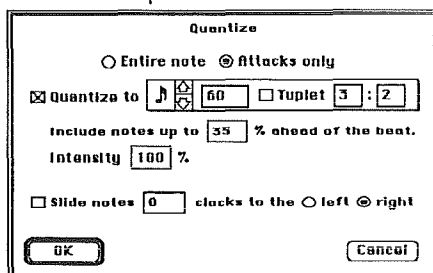
"slide"
(shift start
times)

The Quantize command also allows you to shift start times in
the quantized region slightly away from the grid interval. This
feature is valuable for creating passages that are a little
ahead of or behind the beat, sliding the notes in a track.

Begin by choosing Quantize from the Change menu to bring
up the Quantize dialog box. Then select the quantization
value by using the arrow controls to choose the
corresponding note duration icon. To select a tuplet
resolution, click on the box next to "Tuplet." Then enter the
tuplet values you wish by clicking on the appropriate boxes
and typing in the numbers.

Based on the duration you choose, the number of clock ticks
in each note value will appear in a box to the right of the
arrow controls. If you prefer, you can simply type in any
duration value you wish in this box. If you wish to slide notes
without quantizing them, click in the box next to the words
"Quantize to", removing the "x" from it.

If you wish to select an offset for quantization, click on the box
for the "slide notes" option so that an "x" appears in the box.
Decide whether you want to slide notes before(**left**) or after
(**right**) the grid boundaries, and click on the circle next to
your choice. Finally, type in the number of clock ticks that you
want for the offset (48 per quarter note).

When you've entered your selections, click on OK or press
Return to complete the Quantize command. If you wish, you
can click on Cancel to exit without making any changes.
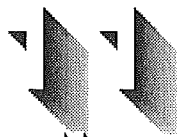
Windows

Track Sheet	⌘1
Song Editor	⌘2
Step Editor	⌘3
Pitch Bend	⌘4
Channel Pressure	⌘5
Key Pressure	⌘6
Modulation	⌘7
Controllers	⌘8
Program Change	⌘9
Conductor Edit	⌘0
✓Conductor	
Transport	

The Windows menu provides access to any of the main Master Tracks Pro data windows. If a window is not currently on the screen, or if it is hidden behind other windows, you can bring it to the front and activate it from the Windows menu in one of two ways.

• You can choose the window you wish by name from the Windows menu

• You can press a Command–key sequence on your Apple //gs keyboard.

Here's a brief description of each of the main Master Tracks
Pro windows, including the Command-key sequence you can
use to call up the window from the Apple //gs keyboard:

track sheet ▷ Command–1

The Track Sheet window allows you to see and name all the
tracks in your sequence. In addition, it lets you choose which
tracks play, record, solo, and loop. You can also enter MIDI
channel settings and initial MIDI program numbers for each
track in the sequence.

song editor ▷ Command–2

The Song Editor window provides a graphic display of your
sequence in units of measures, and shows you where the end
of the sequence falls. Blocks of measures can be selected
and edited with a variety of powerful commands. You can
place and display markers that allow to quickly find specific
places in your sequence.

step editor ▷ Command–3

The Step Editor window lets you see and edit MIDI note data
graphically. You can input, move, copy, and erase individual
notes anywhere on the graph, and you can also edit note
parameters numerically. In addition, you can use a step
method for note entry, and you can select regions of notes for
editing operations.

pitch bend ▷ Command– 4:

The Pitch Bend window allows you to display and edit pitch
bend data. You can enter, edit, and erase individual pitch
bend events, and you can draw in consecutive events
graphically. You can also select regions of pitch bend events
for editing operations.

channel
pressure
(aftertouch) ▷ Command–5

The Channel Pressure window lets you work with MIDI
channel pressure data, also called monophonic aftertouch.
Using a graph in the window, you can add, edit, and erase
individual channel pressure events, and you can also draw
them in consecutively on the graph. Regions of channel
pressure events can be selected for editing operations as
well.

key pressure ▶ Command-6

The Key Pressure window is the window for displaying and working with MIDI key pressure data, also called polyphonic aftertouch. You can enter, change, or erase key pressure events on the graph in the window, draw in consecutive events, or select regions of events for editing operations.

modulation ▶ Command-7 (Controller #1)

The Modulation window lets you display and edit MIDI modulation data which usually corresponds to the mod wheel on your synthesizer. The graph lets you input, edit, or erase modulation events, draw them in as a group, and select events in regions for editing operations.

controllers ▶ Command-8

The Controllers window lets you enter and edit data for any MIDI controller. Using the graph in the window, you can enter, edit, or erase individual controller events, draw them in consecutively, and select them in regions of editing operations. (see the MIDI Controller list pg. 11-4, following)

program change ▶ Command-9

The Program Change window lets you see and edit MIDI program change events within your sequence. You can insert, edit, or erase individual program change events, you can select them regionally for editing operations.

conductor track data window ▶ Command-0

The Conductor Track Edit window lets you view and edit the Conductor track graphically. Basic changes to the conductor track such as smooth tempo transitions over time and re-barring of sections should be made in the Conductor dialog box from the Change menu. The Conductor Track Edit window is intended for viewing and making fine adjustments to the tempo. Tempo values can be entered on any clock tick with the pencil and erased with the eraser. Tempo values occur at every measure and these can be changed with the pencil but cannot be erased. They will change automatically to reflect any changes made in the Conductor dialog.

list of MIDI
controllers

MOST COMMONLY USED MIDI CONTROLLERS

CONTROLLER #1   MODULATION WHEEL
CONTROLLER #2   BREATH CONTROLLER
CONTROLLER #4   FOOT MODULATION
CONTROLLER #5   PORTAMENTO TIME
CONTROLLER #6   DATA ENTRY SLIDER
CONTROLLER #7   MAIN VOLUME
CONTROLLER #8   BALANCE
CONTROLLER #10   PAN
CONTROLLER #64   SUSTAIN (DAMPER PEDAL)
CONTROLLER #65   PORTAMENTO
CONTROLLER #66   SOSTENUTO (MIDDLE PEDAL)
CONTROLLER #67   SOFT PEDAL
CONTROLLER #92   TREMELO DEPTH
CONTROLLER #93   CHORUS DEPTH
CONTROLLER #94   CELESTE (DETUNE) DEPTH
CONTROLLER #95   PHASER DEPTH
CONTROLLER #96   DATA INCREMENT
CONTROLLER #97   DATA DECREMENT
CONTROLLER #122   LOCAL CONTROL (OFF=0, ON=127)
CONTROLLER #123   ALL NOTES OFF
CONTROLLER #124   OMNI MODE OFF
CONTROLLER #125   OMNI MODE ON
CONTROLLER #126   MONO MODE ON
CONTROLLER #127   POLY MODE ON

Layout

✓Follow Playback

Zoom In   ⌘[
Zoom Out   ⌘]

The Layout Menu contains commands that determine the appearance of data windows. These commands can influence your interaction with the program in important ways.

follow playback

When the Follow Playback feature is active, the Song Editor, Step Editor, and MIDI Data windows scroll as the sequence plays, displaying a highlight to indicate the measure that is currently playing. With this feature off, these windows remain as you left them during sequence playback.

To activate the Follow Playback feature, choose it on the Layout menu. When the feature is active, a checkmark appears next to it on the menu.

To deactivate Follow Playback, simply choose it again. The check mark will disappear. When Follow Playback is deactivated, you can scroll to and examine any location in any window independently of the playback transport position.

zoom
in/out

The Zoom commands let you choose how much data you see in the Step Editor and MIDI Data windows. To get the big picture on your sequence, use the Zoom Out command to place more measures on the window. For precise work, use the Zoom In command to show a smaller amount of the sequence at higher "magnification." Four separate levels of zoom are available, so you can easily adjust the display to fit your needs.

The Zoom level set by the Zoom In and Zoom Out commands also determines the number of clock ticks displayed per pixel on the screen, and thus affects the resolution at which you can edit data in the Step Editor and MIDI data windows.

If you zoom all the way in to the maximum level of magnification, each pixel represents a single clock tick. This is the best level for precise work when you're editing notes, pitch bend, or other MIDI data.

When you zoom further out, the clock tick-per-pixel value increases.

When you move the cursor in one of the windows, it is "snapped" to an imaginary grid with divisions at 1 clock tick per pixel, 2 per pixel, and so on, up to a maximum of 4 when you're zoomed all the way out. (*a pixel is the smallest dot on the //gs screen and the minimum distance interval you can move your mouse*) You can use this feature to do a kind of manual "quantizing" of notes and other events in the Step Editor and MIDI data windows. Just click on the note or event with the crosshair (pencil), and the event will automatically be moved to the nearest division of the imaginary grid.

You may also want to zoom out when you are inputting pitch bend or other continuous controller data to economize on memory, and to reduce the rate at which the sequence must send data. If you input pitch bend data when you're zoomed all the way in, you create 4 times as much data as when you're zoomed all the way out!

To zoom in one level, choose the Zoom In command or press Command-[on the //gs keyboard. To zoom out, choose Zoom Out or press Command-]. Using either command affects all the data windows on screen.

If your song contains time signatures with bottom numbers smaller than 1/8 note, the Zoom Level will be constrained.

13
Goodies

Goodies

Memory	
Keyboard...	⌘K
Midi Setup...	
Record Filter...	⌘R

The Goodies menu gives you a set of commands for tailoring Master Tracks Pro to your own system, and for controlling the sequencer from your MIDI keyboard.

display
memory
use

Selecting Memory brings up a small window that shows how much memory, in bytes, that your score is using, how much memory is being used by Master Tracks Pro's clipboard, and how much memory is still available. The memory window will remain on the screen until you close it, or cover it with another window. Bring it to the front by selecting Memory again.

warning

We recommend that you use this window to make sure that you do not get below 60K free memory - the Apple//gs may not operate properly!

Memory

Score Size = 74K
Clipboard Size = 12K
Free Memory = 326K
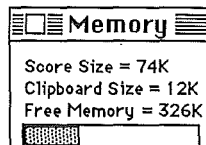
MIDI keyboard setup

Selecting the Keyboard command brings up a dialog box that lets you configure Master Tracks Pro for MIDI keyboard control of these functions. When you've made your configuration settings, click on OK to enter them and return to the program, or click on Cancel to return without entering the changes.

```
┌────────────────────────────────────────────┐
│            MIDI Keyboard Setup              │
│                                             │
│  □ Use in Transport   □ Use in Step Input   │
│                                             │
│  □ Play Key  [C1]   □ o [C2]    □ ♪ [G2]    │
│                                             │
│  □ Stop Key  [D1]   □ ♩ [D2]    □ ♪ [A2]    │
│                                             │
│  □ Record    [E1]   □ ♩ [E2]    □ ♪ [B2]    │
│                                             │
│  □ Rewind    [C#1]  □ ♪ [F2]    □ · [C#2]   │
│                                             │
│  □ FastFwd   [D#1]  □ Tuplet [G#2]          │
│                                             │
│  □ Pause Key [F1]   □ Rest   [A#2]          │
│                                             │
│  ┌──────────┐               ┌──────────┐    │
│  │    OK    │               │  Cancel  │    │
│  └──────────┘               └──────────┘    │
└────────────────────────────────────────────┘
```

MIDI transport control

The options for transport control are at the left side of the Keyboard command dialog box. To activate MIDI keyboard control of the transport functions, click on the small box next to "Use in Transport" in the dialog box. An "x" will appear in the box when MIDI keyboard control of the sequencer transport is active. You can turn it off again at any time by clicking on the box again.

Next, assign each transport function in the list (play, stop, record, and so on) to a key on your MIDI keyboard. Click on the larger box to the right of each function and then play the key to which you want to assign that function. Alternately, you can type in the pitch letter name and octave number.

using the MIDI keyboard for step editing

In addition to entering the key you'll use to control each transport function, you must also activate keyboard control of each function individually by clicking over the small box to the left of the function name. When the keyboard control is active, an "x" appears in the box. You can deactivate any function simply by clicking on the box again. Being able to activate the functions individually allows you to use only the ones you really need, leaving you more keys to play.

note:

Keys that have functions assigned to them will not be recorded in the sequence.
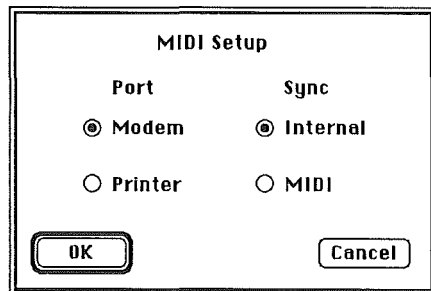
The chapter on the Step Editor describes how to use your MIDI keyboard to insert new notes in the sequence. To activate MIDI keyboard control of the duration of the inserted notes, click on the box next to "Use in Step Input." An "x" will appear in the box indicating that keyboard control of note durations is now active. You can turn it off again by clicking over the box once more.

You can specify which key you wish to use for each duration value by clicking over the box to the right of the corresponding note icon, and then playing the key on your MIDI keyboard, or typing in the pitch letter name and octave number. Using the same method, you can also specify a key to activate the tuplet function, and one to insert a rest equal to the currently selected duration.

Once you've made your keyboard assignments, you must also activate each key separately by clicking over the box to the right of its duration icon. Again, you can deactivate any key by clicking over the box another time. By activating only the keys for the durations you need, you'll save keys for recording music.

configuring your
MIDI port setup

The MIDI Setup command lets you choose which Apple //gs port your MIDI interface is connected to, and whether Master Tracks Pro uses its own internal clock for sync timing, or follows an external MIDI clock source.

```
┌─────────────────────────────────────┐
│            MIDI Setup                │
│                                      │
│       Port             Sync          │
│    ◉ Modem          ◉ Internal       │
│                                      │
│    ○ Printer        ○ MIDI           │
│  ┌──────────┐         ┌──────────┐   │
│  │    OK    │         │  Cancel  │   │
│  └──────────┘         └──────────┘   │
└─────────────────────────────────────┘
```

Selecting the command brings up a dialog box that lets you make these choices. Once you've made your changes, click on OK to to enter them and return to the program, or click on Cancel to exit without saving your changes.

assigning MIDI data port

Master Tracks Pro allows you to use either the modem or printer port for your MIDI interface. To do so, simply click on the appropriate circle on the left side of the MIDI Setup dialog box. A smaller solid black circle will appear within the circle when the selection is made.

selecting internal/external timing

The timing of a Master Tracks Pro sequence can be set by its own internal clock or by an external MIDI clock. If you use an external MIDI source for timing, Master Tracks Pro responds to all MIDI timing messages, including Start, Stop, Continue, Song Pointer, and MIDI clocks.

note:

Only one clock source can be active at a time.

To set the sync source to the program's internal clock, click over the circle next to "Internal" on the right side of the MIDI Setup dialog box.

If you want to sync the sequence to an external MIDI clock source, click instead on the circle next to " MIDI" in the dialog box.

using the record filter

Master Tracks Pro can selectively record only the MIDI data you wish, while it filters out any data that you don't want to record. Choose the Record Filter command on the Goodies menu to bring up a dialog box that lets you choose which combination of MIDI data types Master Tracks Pro will record.

With this feature, you can independently select or disable each MIDI data type, including pitch bend, channel pressure (also known as monophonic key pressure or aftertouch), polyphonic key pressure, modulation, program changes, note data, and other MIDI controllers.

You can also have the program quantize note timing while you are recording.

As a simple example, you may want to conserve memory by filtering out aftertouch or modulation wheel data (since both of these controllers send data continuously, they can quickly fill up large amounts of your system memory). Filtering out the aftertouch and mod wheel data is a simple matter of deactivating these options on the Record Filter dialog box.

You can choose not to record notes at all, so that you can create a separate track for, say, pitch bend data. That way, you can concentrate on making your pitch bends as accurate as possible. You can choose a single channel that Master Tracks Pro will "listen to" while recording, while it ignores incoming data on other channels. You can also quantize on input as many drum Machines do.

```
┌─────────────────────────────────────────────┐
│            Record Filter                     │
│                                              │
│        Select type of data to be recorded    │
│                                              │
│   ☒ Notes              ☒ Controllers         │
│   ☒ Pitch Bend         ☒ Modulation          │
│   ☒ Channel Pressure   ☒ Program Change       │
│   ☒ Polyphonic Key Pressure                   │
│                                              │
│   ☐ Only on channel │1│                       │
│                                              │
│   ☐ Quantize to │♪⊟│ │60│ ☐ Tuplet │3│:│2│   │
│                                              │
│   Shift all notes up to │35│ % ahead of the beat. │
│   ┌────────┐                    ┌────────┐   │
│   │   OK   │                    │ Cancel │   │
│   └────────┘                    └────────┘   │
└─────────────────────────────────────────────┘
```

changing record filter settings

To change the Record Filter settings, first choose Record Filter on the Goodies menu. In response, the Record Filter dialog box appears.

Each MIDI data type appears in the dialog box with a corresponding box to the left of its name. When an "x" appears in the box, that data type will be recorded. When the box is empty, that data type is disabled, and it will be ignored during recording. You can select or disable any combination of data types you wish. Clicking on the boxes toggles them between the selected and disabled settings.

miscellaneous controllers

The Controllers option in the Record Filter dialog box refers to all miscellaneous MIDI controllers other than the ones specifically listed in the box. Consult your synthesizer owner's manual for the numbers of any controllers that your instrument can send or receive.

selecting individual channels on the record filter

Another choice on the Record Filter dialog box, "Only on Channel" allows you to filter out data from all but one MIDI channel when you record. When this setting is active, the box beside it contains an "x". You can deactivate this option by clicking on the box beside so that it is empty, and data from all channels will be recorded.

If you wish to use this option, enter the channel number by clicking on the data box on the right of the option, and then typing in the channel number, from 1 to 16.

quantizing while recording

You can use the option on the Record Filter labeled "Quantize to" to quantize notes while you record them, much as a drum machine does.

Activate this option by clicking in the box next to it. An "x" appears in the box when it is active.

Next, select the resolution for quantization by using the arrow keys to choose the appropriate note duration icon. To quantize to a tuplet resolution, click on the box next to "Tuplet," and enter the tuplet values you wish by clicking on the value boxes and typing in the new numbers. You may also change the percentage value that determines how far ahead of the beat Master Tracks Pro will reach to quantize a note. (see chap. 10 Quantize)

exiting the record filter

When you're finished making your Record Filter selections, return to the main Master Tracks Pro screen by clicking on OK. Any settings you make in the Record Filter can be saved using the Preferences command in the File menu. To return without entering the changes you made, click on Cancel.

In this chapter you'll find information about how you can put Master Tracks Pro to work on your most sophisticated musical chores, including looping, punch in recording, MIDI and SMPTE sync, and more.

conductor
track settings

The program stores tempo, beat and meter values in a separate "Conductor Track" along with each measure in the score, providing an elegant way of setting up conductor "templates" of meter and tempo changes. These values are stored in the Conductor Track and control how the MIDI data is broken up into measures. Conductor templates can be saved to disk as a score for later use. The vertical grey bar in the Song Editor represents the end of the Conductor Track.

re-barring
to remove
a beat

The Conductor track can be utilized to remove measures or even a single beat from your sequence. For example, if you have a 4/4 measure in your piece (say measure 6) which you have decided needs the last beat removed. Select measure 6 and choose Conductor from the Change Menu. Change the meter of measure 6 from 4/4 to 1/4 time. Now when you return to the Song Editor Window or Step Editor Window you will see 4 measures occupying the space previously taken up by measure 6. This is most graphically depicted in the Step Editor Window. Each of these four new measures now contains only one beat. In the Song Editor Window, Cut the last of these new measures (#9) by selecting it along the measure ruler at the top of the window. Selecting measures in this manner cuts time out of the sequence on all 64 tracks and includes the Conductor Track. You can now select the 3 remaining 1/4 measures (#6 - #8) and choose Conductor once again from the Change Menu and rebar those three measures to 3/4 time making them one measure again.

conductor track data window

The Conductor Track Edit Window (Command–0) shows a graphic representation of the conductor track. This is intended as a means of viewing the Conductor Track and making "fine tuning " changes. Basic changes to the Conductor Track should be made from the Change menu using the Conductor dialog box. The graphic in the Conductor Track Data Window is scaled to the beat value so that it can be displayed on one screen. So, if the beat value changes from a 1/4 note to an 1/8th note and the tempo is doubled, the graph line will remain constant just as the sound of the music does. A good example of this would be a piece that changes back and forth from 2/4 to 6/8 time where the beat value might change but the tempo stays the same.

Tempo changes can be made with the pencil icon in this window and undone with the eraser. Tempo values will always be displayed at each measure boundary. A tempo change that occurs exactly on a measure boundary cannot be erased but can be changed again with the pencil.

looping

Individual tracks can be looped during playback. This feature is especially useful with short repeating sections such as bass or drum parts.

Record the part once, and then edit if necessary. You can trim your loops using the Cut command to get the the proper number of measures to loop. A track ends where there are no more filled or hollow measures present in the Song Editor. For reference, the grey vertical bar in the Song Editor indicates the end of the conductor track.
Turn on the track's loop control and let the part play back. Lay down other parts or even other loops against it by recording on other tracks.

Remember that the loop is only stored in memory once, and always starts at the beginning of the sequence. That means if you start playback past the point of the loop, the track will not playback. That also means if you are copying tracks from one sequence to another it may not be possible to preserve the loops that begin later in the piece. This is the reason to create literal copies of your loops, especially before building songs.

Loops encourage speed and spontaneity in music making and also save memory. Use them to work out your ideas. However, once your song or song section is complete, copy and paste the looped part into the track so that it fills out to the

end of the sequence. This will give you the flexibility of Master Tracks Pro's song structure. This will also let you create subtle variations in the loop each time it plays using the Change menu or other regional editing commands.

auto paste

Once you have copied your looped part you can append as many copies of it as you like by repeatedly selecting Paste or pressing Command-V. The insert point automatically moves to the end of the last paste.

looping to the half bar

Master Tracks Pro's Loop feature requires you to loop to the nearest measure but if your phrase ends in the middle of a measure and you want to loop it anyway, it can be accomplished by re-barring the last measure of the track. Let's say you're working in 4/4 time but you want the track to loop a two and a half bar phrase. Select bar 3 (presumably the last bar of the track) and choose Conductor from the Change Menu. Click in the circle next to Set Meter and set the meter to 1/4 time. You will now have 4 measures with one beat each in them in the place of old measure #3 which had four beats in it. Select the last two of these new measures and Cut them.. Your track will now loop the way you want it to.

dumping from other sequencers

You may wish to load a sequence created on another older computer or sequencer (that does not support Midi Files) into Master Tracks Pro to take advantage of its advanced features. This is easily accomplished since Master Tracks can record incoming data on all MIDI channels simultaneously. You only need to make one pass, playing all tracks of the sequence with one track on Master Tracks Pro set to record. After you have transferred the sequence you can use the Strip Data feature to Un - merge the newly recorded track by channel, Pasting data from each MIDI channel onto its own track. To sync the two sequencers together it is recommended that the recording sequencer be the MIDI master and the playing sequencer be the MIDI slave.

editing across windows

The Cut, Copy, Paste, Clear and Mix Data editing commands perform slightly differently depending on which window you are working in.

The Song Editor works with all data types whenever you perform an edit operation. You can work with notes and MIDI data at the same time in the Song Editor.

In the Step Editor, when you cut, copy, or clear, you will only affect the note data on all channels present. In the same way, when you cut, copy, or clear in a MIDI Data window, you will only affect the type of MIDI data in that window.

Keep in mind, however, that the Paste and Mix commands for both the Step Editor and MIDI Data windows will copy **all** data in the clipboard into the sequence, no matter what type or types of data are included.

This scheme lets you strip a particular type of data from a track using Cut or Clear in the Step Editor or MIDI Data Windows without affecting any of the other data in the track. You can also use a track's worth of data collected in the Song Editor and paste or mix it in the Step Editor for MIDI delay (see below).

crescendos
decrescendos

Many patches (sounds) on synthesizers and drum machines respond by getting louder with increased velocity settings but some, like organs, do not. The MIDI Volume controller is controller #7. In the Controllers Window, click on the Controller # Box and use the arrows or the keyboard to enter a value of 7. You can now use the pencil icon cursor to enter decreasing (or increasing) values at any spacing or curve you like. Alternatively you can choose Continuous Data from the Change Menu, select the range of measures over which you wish the change to occur, and enter the starting and ending values.

important:

You *must* have a controller values entered in the track for Change to work. (There must be something to change.)

building
songs

Master Tracks Pro provides up to 9999 measures by 64 tracks of literal track data in which to work provided you have enough memory in your computer. Variations and combinations of two song building techniques give you many ways of building songs from segments without giving up the ability to edit or add additional tracks over the entire length of the song. Using these techniques make it possible to add variation and sweetening to repeating sections and help keep your song organized in a single file.

The first method separates songs into sections within the same long sequence. Build a conductor template and lay out the song structure using markers. You can begin record or play at any point, so you can work on whatever section you like at any time. Leave several blank measures between

sections to avoid accidentally erasing anything, and then, using the Cut command, remove the blank measures later when you've finished recording. You can copy and paste between sections at will and save all sections at once.

Another method lets you build songs in a more traditional way by appending different files together from the disk. For example, you could record three separate sequences and save them individually on the disk in separate files called Intro, Verse and Chorus. Open the verse and copy it. Then Open the Intro and paste the Verse onto the end of it. Set markers if you wish and use Save as... to save the new file. Call it Song. Open the Chorus file and copy it. Open the Song file and paste the Chorus at the end of the Verse. You will now have a large Song in memory based on Intro, Verse and Chorus which you can add to and edit further. This Song can also be used as part of another, longer, song.

song list
mode

If you have enough memory in your Apple //gs, you can have Master Tracks Pro accompany you (or entertain you) for a list of songs and have precise control of the time between songs. Use the method described above but replace "Intro, Verse, and Chorus" with actual songs. Insert a few blank bars between each song and place markers at the beginning and end of each song. The markers allow you to quickly TAB from song to song. In performance you can also use "Pause" assigned to your MIDI keyboard from Keyboard Setup to let you pause between songs and then start up at the right moment.

sequence data
structure
and ties

Master Tracks Pro stores sequences as groups of tracks and measures along with a separate conductor track. The conductor track determines how data is stored, displayed and played back based on the meter, beat and tempo values stored with each measure. Storing data in measures is not required for MIDI sequencing but becomes more important when you begin to provide sophisticated graphic editing operations as those found in Master Tracks Pro, and when you desire to convert your MIDI sequences to music notation (more about this later).

Ties are a special case of MIDI data and may cause problems for you when you cut and paste across tied notes. Some MIDI events are single events such as Program Change #7 or Sustain Pedal On. Because notes have a certain duration between note on and note off and Master Tracks Pro stores

notes in groups of measures, notes that tie across measure "boundarys" are stored internally as notes tied to one another, just as you would with music notation. When you cut across ties (not usually recommended) the ties will automatically be clipped with note on or note off events added so that no notes hang in the sequence or on the clipboard.

delaying a track

You can delay a track by individual clock ticks (there are 48 clock ticks per quarter note) by first Cutting or Copying the track in the Song editor. Then paste the clipboard into a blank track using the Step Editor, selecting the amount of MIDI delay by positioning the insertion point with the Arrow cursor. This will delay all the MIDI data including notes in the track by the number of clock ticks or beats corresponding to your insertion point.

sliding tracks

Another way to produce MIDI delay or even MIDI PRE- Delay is with the slide notes feature in the Quantize Dialog Box from the Change Menu. You can experiment with different values for the number of clocks until you get something that does the job. If you wish to offset start times without quantizing, click in the quantize box to remove the "x" in it.

MIDI delay (echo)

MIDI delay (echo) can be used to "fatten up" a track's sound by playing two tracks together to separate channels slightly offset. More radical delays or offsets can be achieved using the song editor to delay tracks by measures using cut and paste. Rounds or echoing effects can be easily done and undone until you have something you like.

Song Pointer (internal sync)

Master Tracks Pro generates its own internal time base when sync is set to Internal in MIDI Setup using a resolution of 48 clock ticks per quarter note. It will send out MIDI timing messages, including Song Pointer, Start, Continue, MIDI clocks, and Stop corresponding to the Transport activity. For example, whenever you move the Transport to a new location in the sequence, a corresponding MIDI Song Pointer message is sent out.

MIDI Sync

If Sync is set to MIDI in the MIDI Setup, the program accepts the timebase reference from an external MIDI source and interpolates 48 clocks per quarter note based on the incoming MIDI clock rate. It will receive and autolocate to MIDI Song Pointer when in MIDI Sync mode.

SMPTE

Using MIDI Sync mode with an external SMPTE-to-MIDI sync device such as Roland SBX-80, Fostex 4050, Garfield Master Beat, Cooper PPS-1 and others, you can sync Master Tracks Pro to SMPTE. Connect the MIDI out of the external sync box to the MIDI in of your Apple //gs MIDI interface and connect the interface to either the Modem port or the Printer port. Select MIDI Setup from the Goodies Menu and configure the setup so it matches your interface connections. You can now record new tracks while Master Tracks Pro runs in sync with your SMPTE striped video or audio tape.

If your external sync box supports MIDI Song Pointer, Master Tracks Pro will "chase" the tape transport and start anywhere in the piece.

If your external sync box has Tempo Mapping capability, you can create a tempo map that duplicates your conductor track settings.

note:

When synced to MIDI or SMPTE, the Conductor Track becomes unnecessary since the Tempo map should be coming from the SMPTE to MIDI converter. When used in this application, leave the Conductor set to 4/4 bars with quarter note beats.

transposing drum patterns

Master Tracks Pro's Strip Data feature makes this easy. You'll need to know what MIDI note numbers the two drum machines each respond to. You can learn this from the owners manual or by playing each machine with your MIDI keyboard (using Thru on Master Tracks Pro) until you have noted which key corresponds to which drum. Let's take a Yamaha RX snare #1 and convert it to a Roland 707 snare #1. First, we strip the snare out of the Yamaha drum track by clicking the box next to "Notes" and the circle next to "Only notes between" in the Strip Data dialog box from the Change Menu and entering E2 (the note assigned to Yamaha's snare #1) in both note value boxes. Choose Cut if you wish to remove the snare permanently from the drum track and Copy if you want to leave it in. Place the cursor on bar #1 of an empty track and Paste. Select the entire new track and choose Transpose from the Change Menu. In the first note value box enter E2 (from your MIDI keyboard or the Apple //gs) and in the second box, enter D1 (Roland's note assignment for snare #1). Do this with each drum to complete the transition. You can then Mix back down to one track if you wish or keep independent control of each drum for further editing.

notepad

Master Tracks Pro has 64 tracks on which to record. Most people use only 16 to 30 of them most of the time. This leaves a lot of empty space that can be used for making notes about your work. Just scroll down to an unused area in the Sequencer Window, click in a Track Name field and jot down whatever you like, perhaps information about the patches used or other production notes.

memory management

The memory window (selected from the Goodies menu) tells you how much memory your score takes up, how much memory is being used by the clipboard and how much memory is available for more notes. You can clear the clipboard memory by copying or cutting a blank measure. This frees up additional memory for the score.

editing very short notes

Trying to grab or double-click small (short) notes can be difficult even when you're zoomed all the way in. (For instance some drum machines send notes of only 1 tick duration) To help you edit, you can select the region the note(s) fall in and use "Change Duration" (from the Change menu) and lengthen the note(s). This makes the notes easier to grab or double-click. After you do your editing, you can then change the duration(s) back.

keyboard
commands

SUMMARY OF KEYBOARD COMMANDS

TRANSPORT COMMANDS

Space Bar	Start and Stop Transport
Return or Enter Key	Record
Tab Key	Move to next Marker
Shift-Tab	Move to previous Marker

GENERAL COMMANDS

Right Arrow	Enters a rest in Step Entry mode
Delete	Clears selected area in Song ,Step, and Midi Data Windows.
Left Arrow	Deletes last note entered in Step Entry Mode.
#3 - 0	Change measure ruler display values
+, -	Change numbering from odd to even display

WINDOW COMMANDS

Command - 1	Track Sheet Window
Command - 2	Song Editor Window
Command - 3	Step Editor Window
Command - 4	Pitch Bend Window
Command - 5	Channel Pressure (Aftertouch) Window
Command - 6	Key Pressure (Polyphonic) Window
Command - 7	Modulation Window
Command - 8	Controller Window (all other Controllers)
Command - 9	Program Change Window
Command - 0	Conductor Track Edit Window

FILE COMMANDS

Command - N	Start with new sequence
Command - O	Open sequence from disk
Command - S	Save current sequence to disk
Command - Q	Quit Master Tracks Pro™
Command - I	Insert Measure

EDIT COMMANDS

Command - Z	Undo last edit or change operation
Command - X	Cut
Command - C	Copy
Command - V	Paste
Command - M	Mix
Command - I	Insert measure
Command - A	Select All
Control - A	Go to top of file
Control - Z	Go to end of file

STEP EDIT WINDOW COMMANDS

Option – P	Toggles Play / Mute current track
Option – R	Toggles Record On / Off current track
Option – S	Toggles Solo On / Off current track
Option – L	Toggles Loop On / Off current track

LAYOUT COMMANDS

Command -[	Zoom In
Command -]	Zoom Out

GOODIES COMMANDS

Command - K	Keyboard setup
Command - R	Record Filter

In any Midi Data Window, pressing any key except Space bar, Return, Enter, Tab, Backspace, or Clear will toggle between a dotted line graph and a filled graph of any Midi data which is present.

controller
listing

MOST COMMONLY USED MIDI CONTROLLERS

CONTROLLER #1	MODULATION WHEEL
CONTROLLER #2	BREATH CONTROLLER
CONTROLLER #4	FOOT MODULATION
CONTROLLER #5	PORTAMENTO TIME
CONTROLLER #6	DATA ENTRY SLIDER
CONTROLLER #7	MAIN VOLUME
CONTROLLER #8	BALANCE
CONTROLLER #10	PAN
CONTROLLER #64	SUSTAIN (DAMPER PEDAL)
CONTROLLER #65	PORTAMENTO
CONTROLLER #66	SOSTENUTO (MIDDLE PEDAL)
CONTROLLER #67	SOFT PEDAL
CONTROLLER #92	TREMELO DEPTH
CONTROLLER #93	CHORUS DEPTH
CONTROLLER #94	CELESTE (DETUNE) DEPTH
CONTROLLER #95	PHASER DEPTH
CONTROLLER #96	DATA INCREMENT
CONTROLLER #97	DATA DECREMENT
CONTROLLER #122	LOCAL CONTROL (OFF=0, ON=127)
CONTROLLER #123	ALL NOTES OFF
CONTROLLER #124	OMNI MODE OFF
CONTROLLER #125	OMNI MODE ON
CONTROLLER #126	MONO MODE ON
CONTROLLER #127	POLY MODE ON

**Notes**

PASSPORT

625 Miramontes St.
Half Moon Bay, CA 94019
(415) 726-0280